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# Virtual Platforms Skills Required by College of Education Lecturers for Instructional Delivery in Kogi State, Nigeria

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## A B S T R A C T

The shift in the mode of instructional delivery has necessitated the need for teachers at every level to acquire the skills and competencies needed to use virtual learning platforms and classrooms for their teaching activities. This is more important as colleges of education lecturers are responsible for producing the next generation of teachers. This study appraised the skills required by college of education lecturers in Kogi State, Nigeria for instructional delivery with virtual learning platforms and classrooms. The study was survey research. Four research questions and one hypothesis guided the study. The instrument for the study was a questionnaire. Lectures in colleges of education in Kogi State, Nigeria constituted the population for the study. The sample of the study was 100 Science Education lecturers, sampled from two colleges of education. Data was analysed using percentages, mean, standard deviation, t-tests, and ANOVA statistics. The study found that lecturers required skills in planning, engaging in social interactions, presentation, technical, and assessment for virtual; learning classrooms. Also, no significant difference in virtual learning platform skills needed by college of education lecturers based on school type, gender, and qualifications. However, lectures differed significantly based on years of teaching experience. The study has improvements in awakening Lecturers to apprise their virtual platforms usage skills thereby prompting them to seek for improvement translating to production of teachers with twenty-first century teaching skills.

## A R T I C L E  I N F O

## 1. INTRODUCTION

The need to inculcate the right, knowledge, skills, and values in the younger generations for personal and societal development necessitates the establishment of educational process. Education is the systematic process through which human acquire knowledge, experience, skill, and a sound attitude (Munna & Kalam, 2021). It is a process of developing the intellectual faculties of man. Education is instruction and direction as it directs and instructs an individual to fulfil his desires and needs for the exaltation of his whole personality (Williams, 2017). Olafare, Lawrence, and Fakorede (2017) expressed that the unique power of education is that it acts as a catalyst for the wider development goal of any nation. The process of education had been in existence before the advent of formal education system brought by the colonial masters. Education in traditional settings uses both direct and indirect means of instruction. That is, the teacher or instructor who may be one's parent or any adult in the society directly instructs the learner on the skills, values, norms, and any positive knowledge an individual is expected to acquire. In the indirect method, direct instruction may not occur, however, learners observe the parent or any older member of the society and through such process acquire the relevant knowledge, skills, and values expected to become a responsible member of the society (Lakha, 2023). Therefore, the process of instruction under the traditional education system is more of a physical interaction between the learner and the instructor though in a less organized format.

The advent of formal education brought a more organized system of teaching and learning into the process of educating the young ones (Uriah & Wosu, 2012). Under the formal system, the teachers and the learner have a designated point of meeting which is the classroom, a specific time for teaching and learning which is the timetable, and knowledge areas compartmentalized into different areas of learning which are the subjects or courses. The physical mode of teaching and learning also characterized the delivery of formal education through physical contact between the teacher and the learner. In this way, education becomes more formalized and organized. Not only was education process becomes more organized, it was also made advanced and hierarchical. Learning and knowledge becomes more advanced that the levels of education are ranked from lower to advanced level as seen arranged from primary to secondary and tertiary levels of education.

At the tertiary education levels, the process of education was classified based on areas, specializations, profession or services that such fields of study afford the society. Thus, there exist different areas, specializations of study and professions like sciences, arts, engineering, medicine, environmental, business, and humanities among others. One of such fields of learning under humanities is education which has to with process of teaching and learning. The field or profession of education delves into the psychology, philosophy, sciences, technology, principles and practices that guides the acquisition of knowledge, skills, attitudes and virtue.it is the field those studies and researched into the principle and practices that guides teaching and learning. Owing to the importance of this field of study, institutions, faculties and colleges were created to solely educate the old and young ones about it. One of such institutions is the college of education.

College of Education is a post-secondary level of education where teachers are trained to teach at other lower levels of education. It is a post-basic level of education that is saddled with the responsibility of training teachers for primary and junior secondary schools. It awards The Nigerian Certificates of Education which is the minimum entry qualification for entry into

the teaching profession (Federal Republic of Nigeria, 2014). Colleges of education offer courses in arts, social sciences, vocational and technology education as well as science education. The prosecution of science teaching and learning process in colleges of education is through physical classroom activities, assignments, projects, laboratory works, workshops activities, and seminars among others. The bulk of the teaching and learning activities are done through classroom and laboratory activities which involve physical (face-to face) interactions between lecturers (teachers teaching in higher institutions of learning) and students either in the classroom, laboratory, or on the field (Naznean, 2022). Hence, it is the conventional mode of instructional delivery in colleges of education and other higher institutions of learning in Nigeria

The explosion in technological inventions and the advent of information communication technology (ICT) devices has changed the narratives in the use of technology in knowledge acquisition and delivery. The use of ICT in education was only embraced by a few who are early adopters of new inventions while many technophobic individuals did not see the need for the adoption of technology in knowledge acquisition and delivery as long as books and physical teaching and learning process is always possible. This situation was noted by Sallah (2021) that the application of technology in education is still relatively rare as some educators are unaware of the recent expansion in computer technologies for teaching, learning, and research.

Few educators have made it a point of duty to acquire knowledge and skills on the use of information and communication technology devices to deliver instructions since it is still possible to engage in physical teaching and learning. However, the advent of worldwide pandemic Coronavirus termed COVID 19 has sparked a paradigm shift in the mode and manner in which knowledge delivery is being conducted worldwide (Feder, 2022; SkillsYouNeed.com, 2024). Before the advent of COVID-19, the use of technology in knowledge delivery is optional. It is only adopted by those who admire innovations and new inventions. However, the outbreak of COVID-19 has made the use of ICT in teaching and learning not only compulsory but a necessity in the technologically changing world. The need for social distancing which necessitated the closure of schools and made physical classroom teaching and learning impossible led to the wide adoption of online learning during the period. At the initial stage of the virus outbreak and lockdown, it was the thought of many that the lockdown and physical distancing would be for a short period and normal schooling methods would resume in a matter of days or weeks. But as weeks ran into months and there was no hope of soon resumption of normal school activities, many schools and institutions of learning began to adopt various means of reaching out to their students to ensure the education process continued. In response to this need, many developers and programmers began developing different applications for online learning while the existing ones began to gain more patronage. Hence, different virtual learning platforms sprang up and educators began to adopt them in delivering their classes.

Virtual Learning Platforms are software tool that supports the management of education and teaching by using the Internet (Trafford & Shirota, 2011). Learning management platforms are also referred to as Virtual Learning Environments (VLEs) (Alves, Miranda, Morais, 2017). Virtual Learning Environment as explained by Hamid, Peng, Shaharom, Ter, and Raman (2018) is an environment characterized by computers, use of the internet, interaction between users, exchange of views, and access to users to obtain various useful

educational resources. The authors noted further that virtual learning platforms allow users to be in the same room without experiencing any physical contact. Virtual learning platforms as defined by Abdullah, Noh, Yusuff, & Mansor (2013), is an online classroom and a school social space that encompass a calendar, social networks, shared workspace, and online assessment.

As noted by Hamid, Peng, Shaharom, Ter, and Raman (2018) Virtual Learning Environment is more comprehensive than computer-aided instruction (CAI) because VLE allows for communication, interactions, and discussions between teachers and students or among students. Hamzah and Yeop (2016) explained that a Virtual Learning Environment is the same as a Learning Management System. Shahaimi and Khalid, (2016) explained that VLE encompass computer software tools such as Learning Management System (LMS), Course Management System (CMS), Learning Content Management System (LCMS), Managed Learning Environment (MLE), Learning Support System (LSS) and Learning Platforms (LP) all of which compliment computerized learning facilities.  Ibrahim and Osman (2017) reiterated that other names or concepts for VLE, are e-learning, online learning, distance learning, or web-based learning.  Hamzah and Yeop (2016) gave additional terms for VLE as e-learning, Massive Open Online Course (MOOC), or Modular Object-Oriented Dynamic Learning Environment (MOODLE). Based on the different nomenclature given to virtual learning platforms, different brands of virtual learning platforms exist and these include Google Classroom, Microsoft Team, Google Meet, Moodle, Canvas, Zoom, and Blackboard among others. All these platforms are what are used to engage in virtual learning classrooms.

A virtual classroom according to Ahammad (2021) is an online learning environment that affords live interaction between the teachers and the learners in the course of teaching-learning activities. Virtual classroom interactions usually occur via videoconferencing, instant messaging tools, and online whiteboards among others for real-time collaboration. In the virtual classroom environment, real and virtual worlds are combined to provide participants with a sense of presence in the virtual environment. The teachers and learners in virtual classrooms possess tools to present learning content in diverse formats and to execute individual activities and collaborate. Teachers in this mode of teaching and learning have the significant role of the moderator to monitor the learning process and guide group discussions and other activities. Ahammad (2021) explained the two types of virtual classrooms: synchronous and asynchronous virtual classrooms. Synchronous virtual classes are a student-centered instruction where the learners and the tutor interact equally and where active participation, collaborative work, and communication are encouraged in the classroom; while asynchronous virtual teaching, is the one in which the tutor creates video lectures and self-directed activities, which the learners cover at their own pace.

The usage of these virtual learning platforms and classrooms entails some skills on the part of the user including college of education lecturers. Skill according to Güneş (2018) is a combination of behaviours that enables efficient and effective job performance and that requires proficiency. Onanuga and Banjo (2021) describe skills as competencies developed through training and practice.  Therefore, skills are a competency required for effective and efficient job performance acquired through training and practice. Hence, for teachers to be efficient in using virtual learning platforms, they need skills in making use of different aspects of virtual learning platforms. Some of these would include skills in planning and identifying the most suitable learning platforms for the students and the subject, skills in engaging in

social interaction on the platform, skills in presenting the learning contents to learners, and skills in assessing and giving feedback to learners among others (Albrahim, 2020; Korkmaz & Toraman, 2020; School Education Gateway, 2020).

However, many Colleges of Education lecturers do not possess the skills for using virtual platforms or classrooms as they were unprepared for use of these virtual learning platforms beforehand (Perifanou, & Economides, 2022). The majority only depend on social media platforms such as WhatsApp to post educational materials and interact with their learners. However, there are myriads of learning platforms specifically made for instructional delivery, many of which many teachers and educators are not aware of or when they are aware of their existence are not knowledgeable and skilled in their usage. This problem is not limited to teachers in primary and secondary schools alone, but lecturers in higher institutions are not left out. More worrisome are the lecturers in the College of Education whose mandate is to produce teachers for the primary and secondary levels of education. College of education lecturers are expected to be trailblazers on methods and technologies that pertain to teaching and instructional delivery since their mandate is to train teachers. They are expected to be highly knowledgeable and skilled in any methods, strategies, devices, modes, and technologies that could promote the teaching and learning processes. College of education lecturers are expected to train the teachers for other lower levels of education on the use of technology to deliver instructions. However, when the need for virtual learning arose, it was worrisome to note that many colleges of education lecturers themselves found it difficult to use virtual platforms for delivering instructions. OECD (2020) stated that teachers are deficient in online teaching skills. Ferri et al., (2020); Korkmaz and Toraman, (2020); and School Education Gateway, (2020) also reported that teachers are bereft of digital pedagogy skills, online instructional design skills, and online assessment skills.

Several studies have been conducted on virtual learning. Ahammad (2020) studied teacher's skills for effective learning in the virtual classroom environment. Munna and Kalam (2021) did a literature review on the teaching and learning process to enhance teaching effectiveness. Bedoya-Flores, Mosquera-Quiñonez, Mesías-Simisterra, and Bautista-Sánchez worked on educational platforms: digital tools for the teaching-learning processes in education focusing on Moodle platform. Alves, Miranda, and Morais (2017) studied the influence of virtual learning environments on students' performance examining the influence of virtual learning on student academic performance. Hamid, Peng, Shaharom, Ter, and Raman, (2018) also did a literature review on the concept and use of the virtual learning environment in teaching. In all of these studies, few dwell on the skills required for the virtual classroom which is a great asset if the teacher is to be successful in the virtual classroom. Moreover, few of the researchers conducted their studies on teacher training institutions like the College of Education. Though Olafare, Lawrence, Olugbade, and Fakorede (2017) did a study on Colleges of Education Lecturers' attitudes towards the use of information and communication technology in Nigeria, they dwelled on the aspect of attitude and not on the skills required for using the virtual platforms. Perifanou and Economides (2022) worked on digital competencies for online teachers but not specifically on teacher trainers; hence this study.

Now that COVID-19 has come and gone, there is no gainsaying in the fact that virtual instructional delivery has come to stay. Alves, Miranda, and Morais (2017) stated that Virtual learning environments are consolidated within education institutions, hence its acceptance

cannot be questioned. Osghale (2024) stated that a profound transformation is taking place in the educational landscape of Nigeria, signifying the beginning of a revolutionary era. The rapid advancements in technology are redefining the traditional methods of teaching and learning. Many students now prefer to join classes from the comfort of their rooms rather than transporting themselves to schools (Oseghale, 2024). Lecturers also now find it useful to deliver lectures while at home, in offices, or another city or country for conferences or research rather than rushing to class. Besides the ease of teaching and learning that information and communication technologies afford, it also enhances the quality of knowledge and skills that are acquired. Several studies found that Information and Communication Technology (ICT) could enhance the quality of education and relate lessons to actual situations in life (Hamid, Peng, Shaharom, Ter & Raman, 2018). Among the various advantages of using virtual learning according to Oseghale (2024) is experiential learning which allows students to deep themselves in historical events or conduct science experiments online thereby transforming abstract courses into engaging, hands-on experiences. The captivating nature of a virtual classroom draws students into the learning process, making it an adventure rather than a chore. This in turn increases engagement thereby improving retention and understanding. The use of virtual platforms for virtual teaching and learning makes it possible for students from various locations to collaborate in virtual classrooms. This engenders cooperation and promotes communication skills which nurture students for a globalized world. Hamid, Peng, Shaharom, Ter and Raman (2018) remarked that due to receiving knowledge, supervision, and access from online learning resources, learners who undergo virtual learning experience permanent changes that involve their mentality, attitude, thinking, and behaviour.

In light of the various benefits that are accrued to the use of virtual platforms in teaching and learning, it is important that College of Education lecturers who are teachers' trainers be knowledgeable and skilled in the use of these platforms in imparting knowledge to their students. Lecturers also need to inculcate the use of virtual platform knowledge and skills in their students for them to make use of it when they become full-fledged teachers. However, the extent to which these lecturers possess these virtual knowledge and skills needs to be ascertained to design and tailor appropriate training packages to their needs. Moreover, since technology is always evolving daily, there is a need for experienced virtual platform users to update their knowledge on the use of virtual classrooms. This may involve the acquisition of fresh skills or the upgrading of existing ones. There is always room for improvement of skills and the creation of better virtual classrooms for students whether the individual is a beginner or an experienced online teacher (SkillsYouNeed.com, 2024). Hence this study is to find out the skills required by college of education lecturers in the use of virtual learning platforms in instructional delivery. Determining these skills will involve identifying various aspects of the virtual platform usage and presenting them to the lecturers to indicate the areas in which they require skills for adequate attention. Among the areas where skill is required in virtual learning platforms include planning skills for the use of VLP, social skills, technical skills, lesson presentation skills, and assessment of virtual learning skills. Therefore, an assessment of these virtual teaching skill sets was necessary to ascertain areas where college of education lecturers need to be updated for effective virtual lesson delivery. Hence this study.

## 1.1 Research Questions

To achieve the objective of this study, answers were sought to the following research questions.
 a. What are the design and planning skills required by college of education lecturers in the use of virtual learning platforms in instructional delivery?
 b. What are the social functions skills required by the lecturer in delivering instruction using virtual platforms
 c. What are the technical skills required by college of education lecturers for use of virtual platforms in instructional delivery
 d. What are the virtual lesson presentation skills required by college of education lecturer in instructional delivery?
 e. What are the virtual assessment and evaluation skills required by lecturer in delivering instruction using virtual platforms?
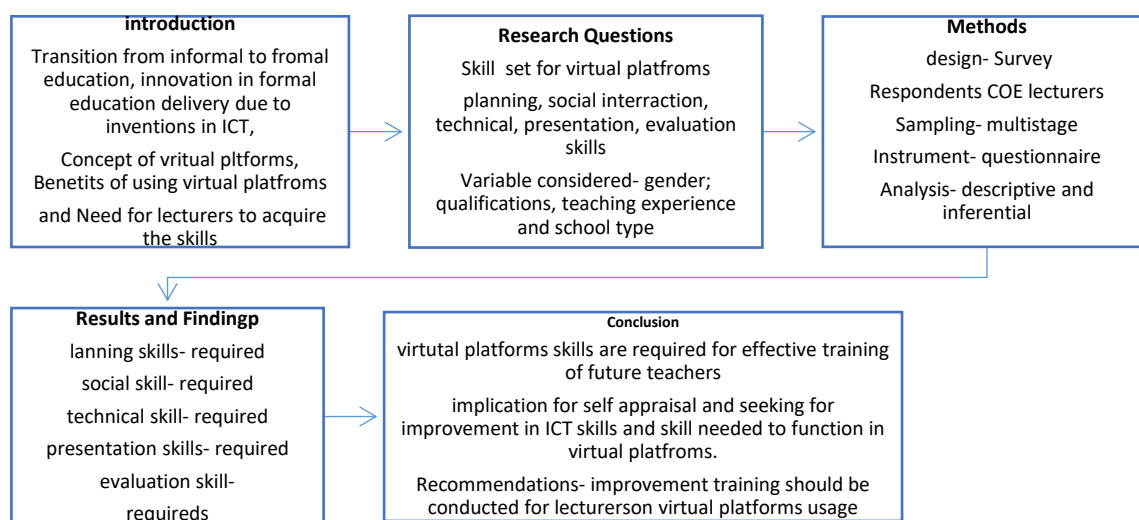
## 1.2 Research hypothesis

The following research hypotheses was tested at 0.05 level of significance in the study.
Ho 1: There is no significant difference in the virtual instructional skills required by college of education lecturers based on school type, gender, qualifications and years of teaching experience

## 2. METHODS

The study adopted survey research design. Survey research design is the one in which a representative sample of the entire population is studied for a particular characteristic with the use of questionnaire or interview and the inference generalized to the entire population (Nworgu, 2015). This research design is deemed appropriate for this study as an instrument is developed to seek the opinion of sampled lecturers on the virtual skills, they required for engaging in virtual classes. The population for this study comprised of all Science Education courses lecturers in all the public Colleges of Education in Kogi State Nigeria. Multi-stage sampling techniques was used in selection of sample for the study. The first stage was the use of Simple random sampling techniques to select two colleges of education out of the three public colleges of education in the state. The second stage involved purposive selection of all available Lecturers that teach science courses including physics, mathematics, agriculture, biology and integrated science in the colleges of education. Based on theses 51 lecturers were involved at Federal college of education, Okene, Nigeria while 49 lecturers were from college of education technical, Kabba, Kogi State Nigeria. The total sample for the study was 100 respondents. The choice of science lecturers stem from the fact that science and technology go hand in hand, thus science lecturers are expected to be early adopter of any technology than lecturers in other field of study (Miguel, 2022). Hence of the choice science lecturers. The instrument for the study was a questionnaire designed by the researcher from literature review and titled Virtual Skills Required by College of Education Lecturers Questionnaire (VSRCELQ). The instrument was divided into two major part I and II, part I comprised of the demographic information of the respondents while part II was sub-divided into five sections based on the research questions which are planning, social function, technical, presentation

and evaluation skills. The questionnaire items were developed from literature. The items have four-point Likert type response options with strongly agree (4), agree (3, disagree (2) and strongly disagree (1).  The instrument was validated by two lecturers from the Department of Educational Technology and one lecturer from the Department of Science Education University of Ilorin, Nigeria.  The instrument was administered to the respondents through the help of research assistants within a period of two weeks. In view of the bias that respondents could exhibit in self-reported questionnaire, they were assured of the anonymity and confidentiality of their response, also they were assured that their responses pose no risk to their personality and their job. They were encouraged to respond with objectivity as much as possible. The analysis of demographic information was done using descriptive statistics of frequency and percentages while the research questions were answered using mean and standard deviation. The hypotheses were tested using inferential statistics of t-test and analysis of variance at 0.05 level of significance. All the data were analysed using SPSS version 23.

**introduction**
Transition from informal to fromal education, innovation in formal education delivery due to inventions in ICT,
Concept of vritual pltforms, Benetits of using virtual platforms
and Need for lecturers to acquire the skills

**Research Questions**
Skill  set for virtual platfroms
planning, social interraction, technical, presentation, evaluation skills
Variable considered- gender; qualifications, teaching experience and school type

**Methods**
design- Survey
Respondents COE lecturers
Sampling- multistage
Instrument- questionnaire
Analysis- descriptive and inferential

**Results and Findingp**
lanning skills- required
social skill- required
technical skill- required
presentation skills- required
evaluation skill-
requireds

**Conclusion**
virtutal platforms skills are required for effective training of future teachers
implication for self appraisal and seeking for improvement in ICT skills and skill needed to function in virtual platfroms.
Recommendations- improvement training should be conducted for lecturerson virtual platforms usage

**Figure 1.** Flowchart of skills require for virtual instruction platform

## 3. RESULTS AND DISCUSSION

### 3.1 Demographic Information

The demographic information of respondents is presented in **table 1**. From the table, 61% of the respondents are male while the remaining 39% are female. Thus, indicating that more male lecturers participated in the study than female lecturers. On the qualifications, 50% of the lecturers have a Bachelor's degree only, 31% have a Master's degree and only 19 % have a Doctorate. Concerning their years of teaching experience, 8% had been teaching for five years or less, 29% had 11-15 years of teaching experience, and 30 of them also representing 30% had 16 years and above teaching experience. Regarding the lecturers' type of school, 51 of them are from the Federal College of Education while 49 are from the State College of Education. These demographics show that the male gender dominated the lecturing position, especially in the sciences indicating a gender imbalance in that profession. The fact that half of the lecturers are still lecturing with a first degree coupled with the fact that the majority

have been in the lecturing profession for more than six years is an indication that many of them do not aspire to pursue higher degrees. This could be a result of the fact that the minimum qualification needed for them to remain on the job is a bachelor's degree. This also portrays that the lecturers are not likely to improve their ICT skills once they are not compelled to teach using virtual platforms.

**Table 1.** Frequency and percentages of respondent's demographic information

| Demographics | Variables | Frequency | Percent |
|---|---|---|---|
| **Gender** | Male | 61 | 61.0 |
| | Female | 39 | 39.0 |
| | **Total** | **100** | **100.0** |
| **Qualifications** | B.Sc.Ed./B.Sc. | 50 | 50.0 |
| | M.Sc./M.Ed. | 31 | 31.0 |
| | Ph.D. | 19 | 19.0 |
| | **Total** | **100** | **100.0** |
| **Years of Teaching Experience** | 0-5 | 8 | 8.0 |
| | 6- 10 | 33 | 33.0 |
| | 11- 15 | 29 | 29.0 |
| | 16 and above | 30 | 30.0 |
| | **Total** | **100** | **100.0** |
| **School Type** | Federal College of Education | 51 | 51.0 |
| | State College of Education | 49 | 49.0 |
| | **Total** | **100** | **100.0** |

**3.2 Design and planning skills required by college of education lecturers for virtual learning platforms**

Table 2 presents the respondents view on the design and planning skills required by college of education lecturers in the use of virtual learning platforms in instructional delivery. From their responses, the design and planning skills required by the lecturers include: skills in determining the best virtual platforms that best suit the course and the learners; skills in identifying the most suitable platform for the course and the learners; skills in determining the teaching method that the platform can accommodate; skills in determining the type of students activities that will be carried out in the course of instructions; skills in deciding on the teachers activities that will be done during instruction; and skills in deciding the class population that can be accommodated on the platforms with respective mean value of 3.78, 3.24, 3.23, 3.40, 3.15 and 3.16. the aggregate mean of 3.33 is an indication that lecturers require design and planning skills for them to use virtual platforms in instructional delivery. Also, the standard deviation value which ranges from 0.50 to 0.8 and close to 1 is an indication that there is less variability in the responses of the lecturers.

The recognition of the need for planning skills for virtual classrooms may not be unconnected with the lecturers' training background. Every trained teacher is aware of the

fact that no meaningful teaching and learning could take place without adequate planning for the teaching process. Therefore, whether it is physical teaching or virtual, planning on the topic, method and materials is the essential ingredient for effective teaching and learning. Also, virtual teaching being a novel development would require adequate planning on the part of teachers who would not want to be disgraced or disappointed in the course of lesson delivery. Thus, lecturers would require the skills that would prepare them adequately for good performance when it comes to this unfamiliar ground. This aligns with Boudreau, (2020) who remarked that excellent instruction is based on decision-making which includes how teachers decide to respond to and engage with students, select curriculum materials, organize learning, and use communication strategies.

This requirement for planning skills for the virtual classroom is in line with the submission of Ahammad (2021) who stated that to use a virtual learning environment, the lecturer should consider which course or courses would benefit from the use of the virtual classroom environment, how resources are organized, the setup of sessions so that both teachers and learners have a smooth and user-friendly experience. With the wide variety of simulations available, the lecturer must make a mindful choice of the specific scenario and adequately prepare for it. The author noted further that preparation is central to heightened participant comfort and session success in a virtual learning environment. The need for planning competencies for the online teacher is also supported by Perifanou, and Economides (2022) to include selecting, organizing, planning, and structuring, then sequencing and scheduling the most appropriate educational and technological resources using various online tools and methods.

**Table 2.** Mean and standard deviation of respondents on the design and planning skills required by college of education lectures in the use of virtual learning platforms in instructional delivery

| S/N | What is the level at which you require the under listed planning and design skill for delivering virtual instructions? | Mean | Std. Dev. | Remark |
|---|---|---|---|---|
| 1 | Skills in determining the best virtual platforms that best suit the course | 3.78 | .504 | S. Agree |
| 2 | Skills in identifying the most suitable platform for the learners | 3.24 | .793 | Agree |
| 3 | Skills in determining the teaching method that the platform can accommodate | 3.23 | .649 | Agree |
| 4 | Skills in determining the type of student activities that will be carried out in the course of instructions | 3.40 | .711 | Agree |
| 5 | Skills in deciding on the teachers' activities that will be done during instruction | 3.15 | .716 | Agree |
| 6 | Skills in deciding the class population that can be accommodated on the platforms | 3.16 | .801 | Agree |
| | **Aggregate Mean** | **3.33** | **.696** | **Agree** |

### 3.3 Social functions skills required by college of education lecturers for virtual learning platforms

**Table 3** shows the social functions skills required by college of education lecturers in delivering of instructions through virtual means. The table reveals that all the statements had mean values above the 2.50 cut-off mark indicating that all the skills are required as social skills for virtual instructional delivery. The standard deviation value which is close to 1 for all the items also shows close agreements in their responses.

The lecturers need for this skill could have resulted from the worry about the absence of direct face-to-face contact with learners which might assist them to predict the feelings of the learners and thereby react accordingly. In spite of the absence of direct physical contact, the virtual classroom is a social place. Any community or environment occupied by human beings will involve social interaction. Therefore, the skill for interacting with students and other clients in a virtual classroom is highly important. This is because positive interactions foster enhanced learning. The fact that the lesson is virtual does not foreclose that social skills are not expedient in the virtual classroom. In addition, the fact that virtual classroom sometimes may be similar to social media platforms where individual relates with little concern for the personality of the other users and sometimes misbehave or insult other users. It is expedient that teachers in virtual class possess the skill that would enable him/her manage the class in such a way that every student will feel welcomed and gain maximally from the teaching process. Hence, the teacher would need skill that will make the student feel they are in the classroom and not on social media space. The importance of social interaction skills in virtual classrooms was supported by Cheung and Cable (2017) by emphasizing that skills for collaborative learning which they believe helps learners to share knowledge among themselves as they work towards achieving common learning outcomes is expedient. Ahammad (2021) also cautioned that just because teachers and students are working remotely doesn't mean they have to be strangers. The author noted that one of the biggest problems with virtual teams is cultivating the social bonds that make everyone feel like they're a part of something special. A close-knit team is more invested in seeing each member succeed, which creates a sense of camaraderie that makes the team much more effective. Therefore, the importance of acquiring social interaction skills by lecturers for virtual teaching is highly germane to promote effective learning without offending individual personality.

**Table 3.** Mean and standard deviation of respondents on the social function's skills required by lecturer in delivering instruction using virtual platforms

| S/N | To what extent do you require the listed social functions skills for delivering instruction using virtual platforms | Mean | Std. Dev. | Remark |
|---|---|---|---|---|
| 1 | Skills on the use of appropriate language to clearly convey intentions and thoughts on virtual platforms | 3.68 | .491 | S.Agree |
| 2 | Skills in managing responses on virtual teaching platforms | 3.28 | .700 | Agree |
| 3 | Skills in initiating and maintaining communication on virtual platforms | 3.34 | .771 | Agree |

| S/N | To what extent do you require the listed social functions skills for delivering instruction using virtual platforms | Mean | Std. Dev. | Remark |
|---|---|---|---|---|
| 4 | Skills in regulating and controlling as well as communicating emotions to listener while on virtual platforms | 3.30 | .775 | Agree |
| 5 | Skills in interpreting social situations online and act accordingly | 3.21 | .594 | Agree |
| 6 | Skills in resolving social interaction issues on virtual platforms | 3.14 | .948 | Agree |
| 7 | Skills in demonstrating practical on virtual platforms | 3.25 | .812 | Agree |
| | **Aggregate Mean** | **3.32** | **.727** | **Agree** |

### 3.4 Technical skills required by college of education lecturers for virtual learning platforms

**Table 4** presents the technical skills required by college of education lecturers for use of virtual platforms in instructional delivery. Data from the table reveals that all the items on the table had mean values ranging from 3.03 to 3.76 which are above the 2.5 cut-off point. Also, the aggregate mean value of 3.29 is an indication that all college of education teachers require virtual skills like installing the virtual teaching platform software on the computer or mobile device; Skills in creating login page or password for learners; skills in setting or operating the microphone to making lesson audible to learners among others as technical skills required for virtual instructional delivery. Also, there is less variability in the responses of the farmers since 9 out of the ten items had standard deviation value ranging from .656 to .822 and which is close to 1. onlyitem1 has standard deviation of 0.49, indicating wide variability in the opinions of respondents on the item. The high mean responses to the need for technical skills might be attributed to the lecturer's realization that ability to operate computer and mobile phones alone is not enough to engage in virtual teaching. This result may also be related to the fear of mishandling or wrong operation of the virtual teaching device or platforms. Since virtual classroom are software that simulate a physical classroom space with clicking on appropriate icon, adequate skills are required of any user to be able to know what each icon stands for and when to use them. Therefore, for any teacher who is not conversant with such interphase, skills training will be required. In addition, the constant upgrade in technology and virtual classrooms would require old users to improve on their existing skills. The need for technical skill aligns with SkillsYouNeed.com (2024) which stated that it is impossible to run a virtual lesson without possessing at least basic technical skills. It noted further that anyone using a virtual class require more than basic knowledge of how to turn on and off a computer and use MS Office and social networks but also requires skills in email management, electronic presentations, and video conference. The need for technical skills by lecturers to teach using virtual classrooms also aligns with Racheva (2018) who explained that the most common tools for virtual classroom are: Videoconferencing, Online whiteboard for real-time collaboration, Instant messaging tool, Participation controls, and Breakout rooms among others which require skills to make use of them. Perifanou, and Economides (2022) also supported the fact that teacher requires competencies to handle Technological tools like digital calendars, project management, scheduling software. The teacher requires skills in installing and

uploading the appropriate educational resources in the cloud or on a Learning Management System.

**Table 4.** Mean and standard deviation of respondents on the technical skills required by college of education lecturers for use of virtual platforms in instructional delivery

| S/N | To what extent do you require the following technical skills for virtual platforms instructional delivery | Mean | Std. Dev. | Remark |
|---|---|---|---|---|
| 1 | Skills in installing the virtual teaching platform software on the computer or mobile device | 3.76 | .495 | S. Agree |
| 2 | Skills in loading or booting the virtual platforms for use | 3.44 | .656 | Agree |
| 3 | Skills in creating login page or password for learners | 3.05 | .757 | Agree |
| 4 | Skills in setting or operating the microphone to making lesson audible to learners | 3.28 | .792 | Agree |
| 5 | Skills in turning on the camera to enable the lesson visible to learners | 3.23 | .790 | Agree |
| 6 | Skills in projecting the contents or uploading the lesson on the virtual | 3.03 | .822 | Agree |
| 7 | Skills in uploading of supplementary reading materials on the virtual teaching platform for learners | 3.19 | .800 | Agree |
| 8 | Skills in tracking students' activities | 3.39 | .680 | Agree |
| 9 | Skills in enabling students' participation mode on virtual platforms | 3.19 | .677 | Agree |
| 10 | Skills in linking the lesson with external web sources for further information | 3.35 | .770 | Agree |
| | **Aggregate Mean** | **3.29** | **.724** | **Agree** |

### 3.5 Presentation skills required by college of education lecturers for virtual learning platforms

Table 5 shows the virtual lesson presentation skills required by college of education lecturer in instructional delivery. From the table, the lecturers require skills items 1 to 10 for instructional presentation in virtual teaching. This is shown by the mean value of items 1- 10 which ranges from 3.03 to 3.51 and which are above the 2.50 cut-off mark. Also, the aggregate mean value of 3.29 also indicates an overall agreement that lecturers require presentation skills in virtual instructional delivery. The high standard deviation of all the items which ranges from 0.577 to 0.857 and close to 1 indicates that the lecturers are close in the responses on each of the items.

The need for presentation skills by the lecturers may be as a result of their experiences while attending conferences and seminars where some people find it difficult to use power point in presenting their papers. Owing to the fact that virtual classroom is even more sophisticated than power point presentation in the sense that it involves showing the board, using the pointer, muting and unmuting the microphone, highlighting texts, inserting video or animations among others these sophistications might have dawned on the lecturers thereby seeing their deficiencies and need for skills in virtual classroom presentation. This

need is supported by Perifanou, and Economides (2022) that presentation skills required of the lecturer entails the ability of the online teacher to present, demonstrate, describe, and explain, the subject using various online methods and tools like software for presentations, live streaming, webinars, web conferencing, webcasting, digital distribution and sharing tools, virtual tours, simulations and serious games, online labs, and virtual experiments.

The ultimate goal of engaging in virtual teaching is for students to learn. However, whether in physical classes or virtual classes, the role of the teacher as a facilitator of learning remains the same. Therefore, presentation skills are highly valuable more especially in an online classroom where several factors can easily detail the objective of the session if the manner of presentation is faulty. Also, given the technicalities that technology entails, electronic presentation skills are a sin-qua-non in virtual platforms (SkillsYouNeed.com, 2024). This concords with Albrahim, (2020) who stated that communicating, taking the initiative, and managing time are some skills that teachers can use to help students successfully learn online. The author stressed further that the fact that nearly everyone has a phone or other telecommunication device at their disposal does not make it easier to communicate in a virtual class.

Explaining presentation skills in virtual classrooms Ahammad (2021) noted that lecturers in virtual classrooms are expected to possess the ability to present a variety of content and learning activities. The teacher should have the ability to give differentiated instruction, which considers the differences in the needs, levels, and learning styles of the learners. Skills in using various sources like text, images, diagrams, audio, and video, among others to present the content is expected of the teacher. Presenting the content through various types of media retains the attention and interest of the learners. The teachers should possess the ability to ensure high interaction in virtual classrooms. Thus, the lecturers should be skilled in synchronous virtual classrooms to successfully engender active participation and engagement of the learners.

The teachers in virtual sessions should be skilled in creating opportunities for frequent interaction between learner and tutor, learner and other learners, and learner and content there should be opportunities for frequent interaction between learner and tutor, learner and other learners, and learner and content. Presentation skills involve creating opportunities for collaborative learning in which learners work together to achieve a common goal, exchange views, clarify the meaning of concepts, or solve problems together.

**Table 5.** Mean and standard deviation of respondents on the virtual lesson presentation skills required by federal college of education lecturer in instructional delivery

| S/N | Rate the level at which you require the following virtual platforms' lesson presentation skills in instructional delivery | Mean | Std. Dev. | Remark |
|---|---|---|---|---|
| 1 | Skills in using on online white board in presenting instruction | 3.30 | .718 | Agree |
| 2 | Skills in presenting the lessons logically and sequentially on the virtual platform | 3.31 | .775 | Agree |
| 3 | Skills on the use of power point presentation during instruction | 3.47 | .577 | Agree |

| S/N | Rate the level at which you require the following virtual platforms' lesson presentation skills in instructional delivery | Mean | Std. Dev. | Remark |
|---|---|---|---|---|
| 4 | Skills in managing students' contributions on the virtual platform | 3.03 | .822 | Agree |
| 5 | Skills in making the lesson audible and visible to learners | 3.05 | .857 | Agree |
| 6 | Skills in posting notes and reading materials for students' consumption on the virtual instruction | 3.34 | .794 | Agree |
| 7 | Skills in making demonstrations and illustrations visible to learners during virtual instruction | 3.51 | .577 | S. Agree |
| | **Aggregate Mean** | **3.29** | **.731** | **Agree** |

### 3.6 Virtual assessment and evaluation skills required by college of education lecturers for virtual learning platforms

The virtual assessment and evaluation skills required by a lecturer in delivering instruction using virtual platforms is presented in Table 6. From the table, Lecturers affirmed with the aggregate mean value of 3.34 that they require skills for virtual assessment of instructions. Among the skills required include Skills in uploading or authoring the questions following the features of the online platform; Skills in setting the appropriate response format for the question; Skills in marking the question online; skills in setting the appropriate response format for the question; and Skills in making the questions visible and accessible to the learners. Also, the aggregate standard deviation value of 0.711 shows that there is less variability in the opinions of the lecturers on the items.

This need for virtual classroom assessment skill by lecturers could be attributed to the lecturers' realization that virtual classroom is different from physical class where teacher can write the test question on the board or type it on paper and collect the script for marking. Virtual classroom assessment involve ability to manipulate varieties of tools for typing the questions, setting the write answer, setting the submission period, limiting the number of words for essay questions and grading among others. These activities require skills which is different from what is obtainable in the physical classroom, hence the lecturers need for assessment skills. This need for assessment skills was further buttressed by Ahmmad (2021) that with the wide variety of communication channels being deployed, an important detail can go unnoticed by some members. For instance, someone might be unable to view a screen share during a teleconference. Assessment is a precursor to feedback. Giving feedback is very important in learning and before feedback can be given assessment is first conducted. Therefore, possession of skill in giving assessment online will help the lecturers to determine the extent at which their teaching is successful and how much the learner has gained from their teaching session. Teachers' ability to ask short, specific, and frequent questions can keep team members informed, kept abreast of developments, and productive.

**Table 6.** Mean and standard deviation of respondents on the virtual assessment and evaluation skills required by lecturer in delivering instruction using virtual platforms

| S/N | To what extent do you require the itemized assessment and evaluation skills after delivering the instruction using virtual platform | Mean | Std. Dev. | Remark |
|---|---|---|---|---|
| 1 | Skills in uploading or authoring the questions in accordance with the features of the online platform | 3.40 | .778 | Agree |
| 2 | Skills in making the questions visible and assessable to the learners | 3.04 | .816 | Agree |
| 3 | Skills in setting the appropriate response format for the question | 3.41 | .588 | Agree |
| 4 | Skills in marking the question online | 3.31 | .748 | Agree |
| 5 | Skills in making feedback assessable to the learners on their performance through the virtual platform | 3.53 | .627 | S. Agree |
| | **Aggregate Mean** | **3.34** | **.711** | **Agree** |

### 3.7 Testing of Research Hypothesis

Ho 1: There is no significant difference in the virtual instructional skills required by college of education lecturers based on school type, gender, qualifications and years of teaching experience

**Table 7** presents the t-test results on the virtual instructional skills required by college of education lecturers on the basis of school type. From the table, lecturers from federal college of education had mean value of 3.34 while that of state College of Education is 3.28. The probability value is 0.39. Since the p-value is greater than 0.05 level of significance, the null hypothesis of no significant difference is hereby not rejected. Implying there was no significant difference in the virtual instructional skill required by federal and state college of education lecturer.

**Table 7** also shows the result of t. test of hypothesis on the difference between male and female college of education lecturers on the virtual skills required for instructional delivery. From the table, the mean value for male lecturers is 3.35 while that of the female lecturers is 3.24. The probability value is 0.19. Since the probability value is above the 0.05 level of significance, the null hypothesis of no significance is hereby not rejected, hence there was no significant difference in the virtual instructional delivery skills required by male and female college of education lecturers.

Further on **Table 7** is the Analysis of variance of the difference in the responses of College of Education Lecturers on the Skills Required for Virtual Instructional Delivery on the Basis of Qualification. From the table, the probability value is 0.116 which is greater than the 0.05 level of significance. Hence, the null hypothesis is hereby not rejected meaning that there was no significant difference in the virtual instructional skill required by college of education lecturers holding, Bachelor degree, Master's Degree and those with Doctoral degree.

Analysis of Variance of the difference in the responses of College of Education lecturers on the skills required for virtual instructional delivery on the basis of Teaching Experience is revealed in **Table 7**. From the table, the probability value is 0.001 which is less than the 0.05

level of significance. Hence, the null hypothesis is hereby rejected implying that there was a significant difference in the virtual skills required by teachers with 0- 5 years,6-10 years ,11-15 years and 16 and above years of teaching experience.

The results of test of hypotheses indicated that the difference in skills required for virtual classroom was not significant for school type, gender and qualifications except for teaching experience. These implies that whether the institution is state or federal government owned it has no impact on the skills possessed by the lecturers when it comes to the use of virtual classrooms for teaching. Though some federal; government-owned institutions might have ICT facilities than state-owned institutions, it does not translate to the lecturers making use of the facilities thereby making them possess the skills in their usage. Also, the gender and qualifications of the lecturers do not bring about differences in the skills required by lecturers for virtual teaching. The imbalance in the gender distribution of lecturers could also be responsible for the lack of difference. Since the respondents seems to be male dominated, their responses to the virtual skills required might have outweigh that of female resulting in the obtained result. Although the male gender is adjudged to be more ICT compliant, the use of it in instructional delivery does not show any significant difference. This aligns with Mahdy and Ewaida (2022) who reported a trend that female students perceived that they were less comfortable with their technological skills during online learning compared to male students, although this differential was not statistically significant. Omar and Ali (2023) results similarly indicated that there were not any statistically significant differences between male and female teachers in terms of their ability to incorporate gamification into their teaching practices, suggesting that both genders face comparable difficulties in this regard and thus may have the same virtual skill need.

With regards to the lecturers' qualifications, the academic qualifications of the lecturers do not translate to differences in the skill required for online teaching because whether a lecturer is masters or doctorate holder, it is the personal development of the individual in the area of ICT that makes one to be skilled. Although it would be expected that lecturers with higher qualifications possess more skills in virtual platform usage, if it was not used in their training there is likelihood that they may not be able to use it if they did not engage in personal development. This underscores the need for improvement for all categories of lecturers in the use of virtual platforms in spite of their gender, qualifications and their school type.

However, lecturers differ on the skills required for virtual instruction based on years of teaching experience. This might be due to the fact that lecturers with longer years of teaching experience are likely to be older than those with few years of teaching experience. Since older lecturers have been teaching with conventional physical mode, they might require more skills to transit to virtual platforms. On the other way round, it could be that the junior lecturers who are expected to be younger are the ICT generation age which are more conversant with ICT than the older ones and could easily navigate through any ICT platforms with less assistance. However, the difference in years of teaching experience supports the assertion that the younger generation is more ICT savvy than the older generation which also translates to the fact that lecturers with longer years of experience are more likely to be older than those with fewer years of teaching experience. Hence, this difference in the skill required based on experience could be that the younger lecturers require only few of those skills for them to be able to engage in virtual class instruction while the older lecturers who are stuck to the conventional mode of teaching might require much training and tutoring in those skills

to be able to engage the virtual platform in teaching. This agrees with the submission of Koh et al. (2014) who identified a significant difference in ICT integration concerning the teaching experience and found that TPACK of novice teachers was higher than experienced teachers. Similarly, Akram, Yingxiu, Al-Adwan, and Alkhalifah, (2021). Stated that the expectation is that teachers' knowledge increases as their years of experience increases. Their results however showed a statistical significance in the TPACK of faculty members' knowledge, where faculty members with experience of 2–5 years portrayed higher TPACK than the teachers with more years of teaching experience.

**Table 7.** t-test and analysis of variance on the difference in the responses of college of education lecturers on the skills required for virtual instructional delivery based on school type, gender, qualifications and years of teaching experience

| School Type | N | Mean | Std. Dev. | Std. Error Mean | t | df | Sig. (2-tailed) | f | Sig | Rem |
|---|---|---|---|---|---|---|---|---|---|---|
| Federal College of Education | 51 | 3.34 | .702 | .098 | .419 | 98 | .676 | 1.081 | 0.391 | NS |
| State College of Education | 49 | 3.28 | .730 | .104 | .419 | 97 | .676 | | | |
| Male Lecturers | 61 | 3.350 | .668 | .086 | .763 | 98. | .447 | 1.277 | 0.193 | NS |
| Female Lecturers | 39 | 3.240 | .755 | .121 | .743 | 74 | .460 | | | |

| | | Sum of Squares | df | Mean Square | F | Sig. | |
|---|---|---|---|---|---|---|---|
| **Qualifications** | Between Groups | 264.175 | 2 | 132.088 | 2.199 | .116 | NS |
| | Within Groups | 5826.003 | 97 | 60.062 | | | |
| | Total | 6090.179 | 99 | | | | |
| **Teaching experience** | Between Groups | 920.953 | 3 | 306.984 | 5.701 | .001 | S |
| | Within Groups | 5169.225 | 96 | 53.846 | | | |
| | Total | 6090.179 | 99 | | | | |

## 4. CONCLUSION

College of education lecturers required skills in planning for the use of virtual platforms with regards to the course and the learners; identifying the most suitable platform the teaching method that the platform can accommodate; type of students and teachers' activities that the platform accommodates among others. Also, skills are required by college

of education lecturers on generating and sustaining positive as social interaction during instructional delivery through virtual platforms. Since Virtual classroom is an online learning environment that affords live interaction between the teachers and the learners in the course of teaching-learning activities. Technical skills in the operation of computer and other ICT gadgets beyond the booting and typing on computers are required. The lesson presentation skills required by College of Education lecturers for virtual teaching include Skills in using an online whiteboard to present instruction logically and sequentially, on the virtual platform; Skills in the use of Power-Point presentations during instruction; Skills in making the lesson collaborative and interactive. As assessment helps to obtain feedback on the achievement of the teaching objective, lecturers require skulls for carrying out effective assessments on virtual platforms. Although years of experience have a significant on the differences in skills required for virtual instructional delivery school type, gender and qualifications have no influence. Thus, lecturers' skills should be developed in line with their areas of need. Also, future training programmes on virtual learning environment should be based on the needs of the participants after a due assessment of what they require for optimal performance.

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