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RESEARCH ARTICLE

ANALYSIS AND EVALUATION OF THE USE OF E- LEARNING FACILITIES FOR TEACHING AND LEARNING IN PUBLIC JUNIOR SECONDARY SCHOOLS IN FCT ABUJA, NIGERIA

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ABSTRACT

This Research study investigated the performance analysis and evaluation of the use of e – learning facilities for teaching and learning in public junior secondary schools in Abuja Municipal Area Council of FCT, Abuja, Nigeria from 2013 till date. 200 junior secondary school teachers were randomly selected across the Abuja Municipal Area Council for the survey. A research instrument was developed on the availability and utilization of e-learning materials by the teachers. The instruments contained 35 items. The data were collated and analyzed using inferential statistics and computer package. The outcome of the study shows that there was serious shortage of e – learning/ICT teachers in our public junior secondary schools in FCT. The study also reveals that most of the school lacks the e – learning facilities, thereby making it difficult for e – learning to take place in such schools. The study further reveals that most of the facilities available were not in proper use or not in use at all because of one problem or the other. The only materials that most of the schools have are chalk board and some white boards. It was also recommended that government through the Education Secretariat of FCT Abuja should among other things recruit more ICT/e – learning teachers to man all these facilities in the various junior secondary schools across Abuja. As part of the recommendations to the Education Secretariat, the existing teachers should be trained on the latest e – learning technologies and also equip the schools with modern ICT/e-learning materials.

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INTRODUCTION

E - Learning can be described as a method of receiving or sending an instructional materials or message through electronics means. In order words, it means delivery of teaching and learning through the use of electronic media. E- Learning is also a method of accessing academic or non - academic messages through the use of multimedia technologies such as tape, CD- Rom, radio, internet, intranet etc. e – learning is a method of interactive technology that encourages a system of lifelong learning. Because of the flexibility in the e- learning mode of teaching and learning, any individual interested in learning can still do that irrespective of age, location and place. Ironically, lack of qualified e- learning/ICT teachers has been attributed as the major challenge facing the full implementation of e – learning in Junior Secondary Schools in Nigeria. In some cases the failure has been attributed to lack of the modern e – learning facilities in schools. To this end, the study examined critically the two situations aforementioned with a view to ascertaining the true position of the e – learning in junior secondary schools

in Abuja. This is a research study which investigated the performance analysis and evaluation of the use of e – learning facilities in teaching and learning in public junior secondary schools in Abuja Municipal Area Council of FCT, Abuja, Nigeria. 200 junior secondary school teachers were selected across the Abuja Municipal Area Council for the survey. A research instrument was developed on the availability and utilization of e-learning materials by teachers. The instruments contained 35 items. The data were collated and analyzed using inferential statistics and computer package. E- Learning is all about learning process that encourages lifelong learning but not really the technology involved. E – Learning is kind of learning where dissemination of information is aided by the use of multimedia technologies. E – Learning can also be described as education through the use of electronics means. The process of acquiring skills and knowledge through the use of standalone system is known as e – learning. In today's learning, the process by which information is send or received through web – based, virtual classrooms, CD-Rom, satellite or TV etc is regarded as e – learning. Any form of interaction related medium can be regarded as e - learning.

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Some of The Merits of E – Learning

- e – Learning alternative, when used tend to bring out the best in an individual.

- In an e – learning plat form, the individual learner determines his conducive time, where and how to study.
- Different multimedia technologies are always available for the learners to utilize any convenient one.
- The schools of study always ensure that all the programme being run by the school are all accredited by the relevant institutions.
- Options are always set whether formal or informal teaching to accommodate every individual aspiring to learn.
- e- Learning offers a wide range of choice including illustration through simulation and animation method.
- Through the use of e – learning, individual communication and writing skills can be improved because the learner studies at his/her own pace.
- Multimedia provides a good plat form for digital images and simulation that helps the learner to assimilate and retain concepts at a faster rate.
- On line learning can help the user understand the real life concept and improved on their test and speed skills.
- Participatory learning is always encouraged in e- learning platform especially in group work.
- The conceptual development of an individual can further be enhanced through the use of images, audio and other multimedia technologies.
- Learners can always participate in competitive activities such as group test.
- e – Learning activities may enhance the ability of learner to improve the retention and achievement of an individual.
- Learning skills can be enhanced by constant practice.
- Online learning reduces the work load of the school and increase learners' ability.
- Online learning gives the practitioners good feedback and on time.
- Learners always achieve more once they have a good understanding of the conceptual model.
- e – Learning helps learners to study at their comfort zones.
- e – Learning offers the learner opportunity to become confident and proficiency in the use of computer.
- e – Learning is always characterized by its lower cost.
- In terms of speed and fast delivery e – learning remains the ultimate.
- It guarantees effective learning by giving the learner an opportunity to learn at his/her own pace.
- Studying with e learning is also characterized by conducive environment because the learner chooses the environment he or she want to stay.
- Learners always learn more when computer facility is used than when normal classroom is used.
- It reduces inconvenience of traveling long distances to access information
- It saves a lot of time in terms of service delivery without compromising the quality of the skills and knowledge.
- e- Learning is self paced and can always occur anywhere and anytime.
- It is easier to manage large students in an e – learning classes when compared to normal classrooms method.
- Lectures received in an e – learning plat form are always the same.

Some of The Challenges of E – Learning

- Most of the e – learning programs are still being conducted through old modern technologies.

- Majority of the intending learners in developing countries like ours do not have access to computer based acesssories thereby denying them the access to quality education through e- learning platforms.
- Many schools are facing the challenge of updating their study materials.
- Learners with deficiency on computer usage may be frustrated their by dropping out along the line.

Practical Applications of E – Learning

- Many uses of e – learning could be seen in some corporate organisation today where higher academic qualifications are obtained through part – time learning.
- Learning using TV sets is also a practical application of e – learning platform.
- Lecturers and students can easily make research and notes using internet which is also an e – learning platform.
- Meetings of some corporate bodies now holds using e – learning teleconferencing.
- Students can now use their sets to browse to available courses for registration which is an e- learning alternative.

Virtual Classroom

This is the mode of learning where by learners converge uniformly using a computer system, video conferencing, web –based camera etc without any physical contact. The virtual classroom pattern practiced in e – learning encourages learners to learn at their convenient. Learners can comfortably connect or link up to the virtual classrooms without traveling a long distance. Some offices and organizations uses virtual classrooms to teach and educate their staff as a means of manpower development training. In assessment of virtual classrooms, there are some properties of e- learning that must come into play such as multimedia tools like online help; where booking of course materials, online exams, online assessment of grades usual takes place. Virtual classrooms involve the teacher and students' relationship without face – to –face conversation. Characteristics of physical classrooms have been transferred to virtual classrooms to make the quality more reliable and efficient. Virtual classrooms guarantees flexibility on the part of learners. Meaning that as a student's, you can attend the classes at a more convenient time and place. Virtual classroom is always operated in an online platform; the online environment can as well be accessed in a portal or through the use of recommended software from the school. Learners in virtual classrooms received the same type of instruction as in face – to –face learning. Virtual classroom employ a lot of multimedia technologies in accessing its information. it may involves both synchronous and asynchronous skills of communication such as online chat and online teleconferencing.

Components of E – Learning

Some of the components of e – learning include:

- Screen Projector
- White Board
- Laptop/desktops
- Mobile phone
- Recommended tutor software
- Virtual classroom

- Multimedia tools e.g radio, CD-Rom
- Digital camera and lots of others.

Parameters/E- Learning Platforms

The parameters involves in the use of e – learning may include:

- Wide opportunities
- Affordability
- Flexibility
- User interaction
- Encouragement
- Uniform learning
- Big classes
- Development of profession
- Web- based students

Wide opportunities

e – Learning could always affords opportunities especially where it concern the syllabus and curriculum content. e – Learning provides opportunities for learning beyond the classroom. With e – learning one can learn from the comfort of his/her bedroom, market, and workplace.

Affordability

e- Learning affords the learners a very good convenient way of making payments. You can spends little money in buying instructional materials like tape, CD-Rom and flash drive etc.

Flexibility

The flexibility of e – learning is one of the most important aspect of e – learning in the sense that you can learn any place, anywhere in respective of location, time. That is why they call it virtual classroom which were earlier discussed in previous sub heading.

Users interaction

The interactive nature of the e – learning parameter makes the assessment more independent in nature. One can sit down in the comfort of his room and follow his audio tutor and write his exams. You don't need a lecturer to guide you because your online tutor will guide you anytime and anywhere.

Encouragement

In e – learning platform, there are a lot of tools that can support the learner. Example: the online tutor is always there to assist if you follow the instruction.

Uniform Learning

e- Learning platforms encourages uniformity in learning. Every tutorials giving will be exactly the same in every centre.

Big Classes

It is easier to manage many students in an e- learning classes compared to normal classroom platform.

Development of professional students

Professional development of learners is easily guaranteed through e – Learning platform.

Web- based students

Students using online studies are always proficiency in the use of computer system.

Some Categories of E- Learning

- Knowledge databases
- Online support
- Asynchronous training
- Synchronous training

Knowledge databases

This is the category of e – Learning where there is already made databases existing and the software will always guide the user on step by step instructions for performing specific task.

Online support

This is a form of online learning where by internet is used. It may be in form of teleconferencing, chat rooms, email etc.

Asynchronous training

This is more of ancient way of learning. Here learners' studies at their own pace using internet related multimedia technologies.

Synchronous training

This is where learning is performed using internet based multimedia. In this type of training, the instructional material is involved in real time. Every learner is expected to learn with the instructor simultaneously. This document is a template. An electronic copy can be downloaded from the conference website. For questions on paper guidelines, please contact the conference publications committee as indicated on the conference website. Information about final paper submission is available from the conference website.

Objectives

1. To ascertain the level of manpower in terms of e-learning/ICT teachers available in public junior secondary schools in FCT.
2. To assess and evaluate the use of e – learning facilities in teaching and learning in public junior secondary schools in FCT, Abuja.
3. To proffer possible ways to increase the level of utilization of e – learning facilities in teaching and learning in public junior secondary schools in Abuja.

Research Questions

What is the available e – learning materials in public junior secondary schools?

1. What is the extent of utilization of these materials by the teacher?
2. What are the various methods that can be used to improve the utilization of E-learning materials in public junior secondary schools?

Literature Review

Electronic learning, or e- learning, is education based on modern methods of communication including the computer and its networks, various audio – visual materials, search engines, electronic libraries and websites, whether accomplished in the classroom or at a distance. [10]. Generally speaking, this type of education is delivered through the medium of the world wide web where the educational institution makes its programs and materials available on a special website in a such a manner that students are able to make use them and interact with them with ease through closed or shared, networks, or the internet and through use of e- email and online discussion groups. [10]. The definition of e – learning centers on its being a learning methods and a technique for the presentation of academic curricula via the internet or any other electronics media inclusive of multimedia, compact discs, satellites or other new education technologies. the two parties participating in the educational process interact through these media to achieve specific educational objectives. [10]. e – Learning assists in the transformation of the educational process from the stage of learning by rote to one characterized by creativity, interaction and the development of skills.

The students, in e – learning is able to access educational materials at any time and from any place, thereby transforming the concepts of the educational process and learning to go beyond the limits imposed by traditional classrooms into a rich environment in which there are numerous sources of learning. In fact, all forms of learning/teaching through ICT are referred to as ‘e – learning’ [26]. According to [27] and [29], distance education and e – learning do overlap in some cases, but are by no means identical. [26], e – learning on the hand, is a relatively new phenomenon and relates to the of electronic media for a variety of learning purposes that range from add on functions in conventional classrooms to full substitution for the face – to- face meetings by online encounters. [14], defines the permanent separation of the teacher and the learner throughout the length the length of the learning process, as well as the quasi-permanent absence of a learning group throughout the length of the learning process, as two of the major characteristics of distance education [27],[29],[16], the new technologies are applied in a variety of domains for information retrieval from periodicals, books, newspapers and other information resource; simultaneous and multi-media presentations; communication with instructors in – and after – classes; communication amongst students; drilling exercise and sample tests; reading notice board; class administration, etc. [23], the division of the academic teaching responsibility into two separate phases constitutes the essence of the industrial model of distance education.

These analyses further proof that e – learning is gradually gaining grounds in Nigerian educational system. e – Learning as the “combination of learning services and technology to provide high value integrated learning; anytime, anyplace” [7]. e – Learning is being presented in the market place as the next evolution of the training and education industry and the next phase in the digital revolution. However, the e – learning market is very embryonic and although evolving very quickly, very fragmented, with many different perspectives and many different organizations positioning their e – learning solutions, there are some key questions you need to answer as you venture into this brave new world viz:

- What really is e – Learning?.
- How does it differ from existing Technology – Based Training?
- Is it more effective than existing computer – based training?
- Can we replace some of our instructor – led classroom training?.
- What kinds of e – Learning tools and technologies should we be looking at?.
- How do I develop a coherent strategy for e – Learning [7].

4.1 E - Learning Dynamic Matrix

[7], by evaluating many e – learning scenarios, we have developed models to enable us to better map the types of learning requirements to the critical learning dynamics – the structure, content, participation and instruction/facilitation elements. This information can then be constructed as an e-Learning programme model and used to help us identify associated technology support. We represent this mapping process using an e – Learning characteristics and learning models. [7], this matrix can be applied to the defined learning requirements and gives us a clear understanding of the relative role of the different components and determine the nature of them. For example, it can tell us which fixed learning structures are appropriate, whether content needs to be flexible in form (multiple types), the degree of collaboration required, or if instruction is needed a what it might take. According to [24], the diffusion of innovations theory suggests that adoption of an innovation progresses along the timeline from the earlier to the later adoption phases, as a result of a higher proportion of people within an organization making the adoption decision at each next phase of adoption. Research on e – Learning adoption, on the other hand, indicates that although the numbers of not reached its potential [20][19][30]. Adoption of e – Learning in the University context is influenced by a number of factors, including organizational, socio-cultural, intra – and interpersonal factors, to mention a few. Also in e – Learning, a high level of perspective is offered by [6], who note that many e – Learning initiatives fail where substantial

Table 1. Simplified e – Learning Dynamics Matrix

| | Structure | Content | Participation | Facilitation |
|--------------------------------|-----------|----------|---------------|--------------|
| 1 | Fixed | Fixed | Solo | None |
| 2 | Flexible | Flexible | Supportive | Directed |
| 3 | Dynamic | Dynamic | Collaborative | Facilitated |
| | Structure | Content | Participation | Facilitation |
| Information Transfer | 1 | 1 | 1-2 | 1-2 |
| Basic Skill Acquisition | 1 | 1-2 | 2 | 2 |
| Advanced Skill Development | 2 | 2-3 | 3 | 3 |
| Adaptive Expertise Development | 3 | 3 | 3 | 3 |

(Source: eLearnity Ltd).

economic investment is required upfront, and the ability to adopt systems and services is limited. The case is based on an industry/University consortia reference model, which is validated through experiences of the Teradata University Network. [5], examine the track record of different types of institutions in supporting e – Learning innovation and achieving engagement by a critical mass, and find the two achievements tend to be supported by different types of institutional culture. Another author describes the dynamic of institutional change around e – Learning based on a series of discussions about e – Learning diffusion with institutional representations from across the globe. The author notes that in some institutions, e- Learning was an accepted part of everyday activity while in others it struggled to gain traction [21]. There were common factors in institutions that had successfully engaged with e- Learning across teaching and learning functions, i.e e – Learning was approached proactively, was scalable, and self – perpetuating even if not all staff were currently making use of it.

There was a sense of flow for e – Learning and, more confidence in future plans. Unless this sense of ‘business as usual’ is achieved, it is likely that e – Learning will remain the focus of enthusiasts. [28], is another author who describes ideal conditions for e – Learning to flourish. He proposes the LASO (Leadership, Academic and Student Ownership and Readiness) model to ensure enterprise – wide technological transformation through a strategically developed framework, based on a clear and unified vision and a central educational rationale. LASO emphasizes the need for ‘integrated and orchestrated top – down, bottom – up and inside – out strategies’. Harnessing the power of ICT has become a critical strategy among institution eager to offer an affordable, efficient, and flexible learning environment for rapidly growing and diverse communities of learners. Many scholars have viewed distance and line education for individuals with limited access to traditional higher education institutions (HEIs) or those not committed to deep learning [18]. [15], in Nigeria today, technology enhanced learning, including distance and online instruction, is recognized as a viable tool necessary for preparing citizens to participate in the technologically driven global environment.

A multidisciplinary approach to online pedagogical research recognizes the value of technology enhanced teaching and learning as critical in the mix of diverse strategies. [11], Sound pedagogy supported by strong theoretical foundations is of key importance in online learning. [25], pedagogy theoretical foundations, linking theory and practice, are all great challenges for teachers in the higher education sector. E – learning delivers content through electronic information and communications technologies [22]. According to [1], the use of these facilities, involves various method which includes systematized feedback system, computer – based operation network, video conferencing and audio conferencing, internet worldwide websites and computer assisted instruction. This delivery method increases the possibilities for how, where and when employees can engage in lifelong learning. Employers are especially excited about the potential of e – learning for just – in –time learning delivery. By leverage workplace technologies, e – learning is bridging the gap between learning and work.

Workers can integrate learning into work more effectively because they use the same tools and technology for learning as they use for work. Both employers and employees recognize that e – learning will diminish the narrowing gap between work and home, and between work and learning. E – learning is an options to any organization looking to improve the skills and capacity of its employees. With the rapid change in all types of working environments, especially medical and healthcare environments, there is a constant need to rapidly train and retrain people in new technologies, products, and services found within the environment. There is also a constant and unrelenting need for appropriate management and leverage of the knowledge base so that it is read people in new technology, products, and services found within the environment. There is also a constant unrelenting need for appropriate management and leveraging of the knowledge base so that it is readily available and accessible to all stakeholders within the workplace environment. [22].

Categories of e – Learning

Courses

Most discussion of e – learning focuses on educational course materials or courseware are usually modified and added with various media and are upload to a networked environment for online accessing [22].

Informal Learning

Informal learning can be said to be one of the most dynamic and adaptable features of learning but nevertheless it is least recognized [22].

Blended Learning

Integrated learning provides a good transition from classroom learning to e – learning. Integrated learning which is also referred to as blended learning is a combination of a face to face and online learning [12].

Communities

Learning is social [2]. The frequent challenges we battled with in our business milieu are sophisticated and unstable. Because we are in the global era, our methods of problem solving are changing daily. Therefore people dialogue with other members of the same organization or network globally to other organization. Communities strongly contribute to the flow of tacit knowledge.

Knowledge Management

[22], globalization is focused on e- learning because e – learning technology has the potential to bring improved learning opportunities to a large audience than has very previously been possible . [3], suggested that a nation’s route to becoming a successful knowledge economy is its ability to also become a learning society. Knowledge management is an essential process which is concern with how to create atmosphere for people to share knowledge on distribution, adoption and information exchange activities in an organization [4], [13], [17].

Learning Networks

Learning network is a procedure of developing and preserving relationship with people and information and communicating to support each other's learning [22]. [9], states that, the use of pen and paper or educational system today is producing inadequacy and challenges in the global era that we are in today where subject matter is changing speedily. The application of personal learning networks will create connections and develop knowledge for workers to remain current in their field. According to [8], e – learning is re – emerging as a solution for delivering online, hybrid and synchronous learning regardless of physical location, time of day, or choice of digital reception/distribution device.

Varieties of e-Learning

Some of the most typical ways in which eLearning programs are implemented include:

The virtual classroom: the virtual classroom model elearning continues to be the most familiar analogue for building e Learning programs. The intention of virtual classrooms is to extend the structure and services that accompany formal education programs from the campus or learning center to learners, wherever they are located. The virtual classrooms is for learners who may be pursuing a distance education degree made up entirely of online lessons, and it may include campus – based courses, where students join in from a variety of on – and off – campus locations in a real – time class session via the internet. The virtual classroom model includes place posting papers for review and comment, and for completing tutorials and distributing class assignments for team review before posting the secure PDF file containing multimedia assets and breaking away into study sections dealing with shared interest using web conferencing tools.

Online learning: This model of learning revolves around its dependence on courseware, delivered over the internet to learners at a variety of locations where the primary interaction between the learner and the experiences of their learning occur via networked computer technology. Adobe tools, which have long been the de facto standard for creating interaction digital learning content, include such familiar products as Flash*Professional, Dreamweaver, Photoshop*CS, Illustrators CS, Adobe Premiere *Pro, Adobe Contribute*, and Adobe Captivate 2 to name a few.

Rapid eLearning: This is a direct response to eLearning products that made it hard for non-technical subject matter experts and learners to contribute and make use of multimedia learning content to the knowledge base. Rapid eLearning uses tools such as Adobe Captivate 2 and Adobe Presenter 6 to reduce the time it takes to produce rich, engaging Flash Learning Content, while allowing more non – technical contributors, including subject matter experts. Adobe Captivate Learning objects as a stand – alone flash movie or as an element of a multimedia portfolio that can be securely shared within as Adobe PDF document.

Mobile Learning: Mobile learning builds on the availability of ubiquitous networks and portable digital devices, including laptop computers, PDAs, game console, MP3 players and mobile phones, and it takes advantage of place. Independent

flexibility that comes from working away from the desktop. Mobile learning provides the opportunity to connect informal learning experiences that occur naturally throughout the day with formal learning experiences. [Source: *Adobe Systems incorporated*]

Study Location

The data for this study were drawn from all the junior secondary schools across Abuja Municipal Area Council all located within the Federal Capital Territory Abuja, Nigeria.

MATERIALS AND METHODS

The study employs random sampling of 200 teachers drawn from across the junior secondary schools in Abuja Municipal Area Council of FCT Abuja. The instrument for the data collection comprise of 35 items questionnaire which has the title “performance analysis and evaluation of the use of e – learning facilities in teaching and learning in public junior secondary schools in FCT Abuja. It has 3 segments which was designed to sought the three major research questions. The copies of the questionnaire were distributed by the researcher and thereafter collated and analyzed using inferential statistics and computer package. The item was structured based on 4 point scale rating; the decision rule was to be based on the middle point of 2.50. hence, items that has mean of 2.50 and above were regarded as positive or agreed responses while items with points below 2.50 were regarded as negative responses or disagreed responses.

RESULTS AND DISCUSSION

Research question 1. What are the available e – learning materials in public junior secondary schools?

Table II indicates that items 1, 2, 10, 15 and 19 with mean ratings of 2.91, 2.62, 2.91, 2.62 and 3.74 respectively are available. These are projector, white board, intranet/internet, generating sets and ordinary classrooms. The respondents equally affirmed that items 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 16, 17, 18 and 20 with mean rating of 1.11, 1.00, 1.00, 1.00, 1.80, 1.00, 1.67, 2.13, 2.01, 1.00, 1.00, 1.00, 1.50, 1.00 and 1.10 respectively are not available. These items includes laptops/desktops, mobile phone, tutor software/CD, webcam, multimedia tools e.g. radio and CD-Rom, digital camera, desktop scanner, class mate PC, printers, on-line library faculties, online support, solar enabled inverter, electricity enabled inverter, virtual class room and uninterruptible power supply (UPS).

Research question 2. What are the extent of utilization of these e – learning materials by the teacher?

Table III shows that items number 21, 23 and 27 are available in these schools but they are not in use. They have the corresponding mean rating of 1.39, 1.72 and 1.97 these are: screen projector, internet/intranet ready computers and classmate PC, but material number 22, 24, 25 and 26 are available and are in use. And these items are: printer, white board, generating sets and ordinary class rooms.

Table IV is the segment of the research that solved most of the issues raised in research question 3 on the methods used for revamping the dwindling fortunes of e – learning in junior secondary schools in Abuja.

Table 2. The frequency and mean responses on the available e – learning materials in public junior secondary schools

| S/n | Availability of e- learning Materials in JSS Schools | A | SA | D | SD | X | DECISION |
|-----|--|-----|-----|----|-----|------|----------|
| 1 | Projector | 120 | 29 | 31 | 20 | 2.91 | AV |
| 2 | White Board | 100 | 55 | 43 | 2 | 2.62 | AV |
| 3 | Laptops/desktops | 5 | 0 | 6 | 189 | 1.11 | NA |
| 4 | Mobile Phone | 0 | 0 | 0 | 200 | 1.00 | NA |
| 5 | Tutor Software/CD | 0 | 0 | 0 | 200 | 1.00 | NA |
| 6 | Webcam | 0 | 0 | 0 | 200 | 1.00 | NA |
| 7 | Multimedia tools e.g. Radio, CD-Rom | 1 | 0 | 79 | 120 | 1.80 | NA |
| 8 | Digital Camera | 0 | 0 | 0 | 200 | 1.00 | NA |
| 9 | Desktops Scanner | 3 | 0 | 64 | 133 | 1.67 | NA |
| 10 | Intranet/Internet Ready Computers | 120 | 7 | 23 | 50 | 2.91 | AV |
| 11 | Class Mate (PC) i.e. small laptops. | 62 | 129 | 7 | 2 | 2.13 | NA |
| 12 | Printers | 111 | 4 | 72 | 13 | 2.01 | NA |
| 13 | On – Line Library facilities | 0 | 0 | 0 | 200 | 1.00 | NA |
| 14 | Online Support | 0 | 0 | 0 | 200 | 1.00 | NA |
| 15 | Generating Set | 100 | 40 | 25 | 35 | 2.62 | AV |
| 16 | Solar enabled inverter system. | 0 | 0 | 0 | 200 | 1.00 | NA |
| 17 | Electricity enabled inverter | 3 | 0 | 47 | 150 | 1.50 | NA |
| 18 | Virtual Class Room | 0 | 0 | 0 | 200 | 1.00 | NA |
| 19 | Ordinary Class room | 181 | 19 | 0 | 0 | 3.74 | AV |
| 20 | UPS (uninterruptible Power Supply) | 0 | 0 | 10 | 190 | 1.10 | NA |

Note: first column is the s/n = Serial number of items, column 2 items; Availability of Materials = you believe the following items are available:

A = Agreed that it is available

D = Disagree that it is available

SA = Strongly Agreed that it is available

SD = Strongly Disagreed that it is available

X = is the mean score of responses for the item.

Table 3. The frequency and mean responses on the utilization of e – learning materials available to teachers in public junior secondary schools

| S/n | Utilization of Available e – Learning Materials in JSS | A | SA | D | SD | X | DECISION |
|-----|--|-----|-----|----|-----|------|----------|
| 21 | Screen Projectors | 0 | 5 | 15 | 180 | 1.39 | NOTINU |
| 22 | Printer | 120 | 30 | 11 | 39 | 3.15 | INU |
| 23 | Internet/Intranet Ready Computers | 4 | 0 | 46 | 150 | 1.72 | NOTINU |
| 24 | White Board | 80 | 110 | 4 | 6 | 3.05 | INU |
| 25 | Generating Set | 120 | 3 | 67 | 10 | 3.15 | INU |
| 26 | Ordinary Class Rooms | 3 | 197 | 0 | 0 | 3.92 | INU |
| 27 | Class Mate PC | 3 | 72 | 3 | 122 | 1.97 | NOTINU |

Table III column 1 is s/n i.e. list of items. Items include Utilization of Available materials: to what level do you believe the following items to be utilized by the teachers.

A = Agree that it is utilized

D = Disagree that it is utilized

SA = Strongly Agreed that it is utilized

SD = Strongly Disagreed that it is utilized

Where X is the mean score of responses for this item.

Overall decision here means the outcome of respondents answers based on the mean score for these item. The final decision can be INU meaning in use or NOTINU meaning not in use.

Table 4. The mean responses on the possible methods to improve the level of utilization of e – learning facilities in teaching and learning public junior secondary schools

| S/N | Methods of Revamping e – learning in JSS | X | REMARK |
|-----|---|------|----------------|
| 28 | Continuous training and retraining of the e – learning/ICT teachers. | 4.00 | Strongly Agree |
| 29 | Provision of equipped computer laboratories in all the junior secondary schools. | 3.94 | Agree |
| 30 | Recruitment of more e- learning/ICT teachers in all the junior secondary schools. | 3.96 | Agree |
| 31 | Deployment of generating sets and solar inverters for all rural schools as the case may be. | 4.00 | Strongly Agree |
| 32 | Provision of internet/intranet ready computers to all the schools | 3.81 | Agree |
| 33 | Provision of fence and other security measures in all the schools. | 3.93 | Agree |
| 34 | Regular monitoring of the junior secondary schools by the concern authorities to ensure proper utilization of the e – learning facilities | 4.00 | Strongly Agree |
| 35 | By ensuring equitable distribution of the facilities. | 4.00 | Strongly Agree |

Table 3 shows that all the respondents strongly agreed that with items 28, continuous training and retraining of e-learning/ICT teachers, 31, deployment of generator sets and solar inverters for all rural schools as the case may be, 34, regular monitoring of the junior secondary schools by the concern authorities to ensure proper utilization of the e – learning facilities and 35, by ensuring equitable distribution of

the facilities, with their corresponding mean rating of 4.00, 4.00, 4.00 and 4.00 respectively and also table 3 equally shows that all the respondents agreed that items 29, 30, 32 and 33 with their mean ratings of 3.94, 3.96, 3.81 and 3.93 respectively will help to revamp the dwindling fortunes of e – learning in junior secondary schools.

Conclusion and Recommendation

The outcome of the study showed that there were serious shortage of e – learning/ICT teachers in our public junior secondary schools in FCT. The study also reveals that most of the school lacks the e – learning facilities, thereby making it difficult for e – learning to take place in such school. The study further reveals that most of the facilities available, was not in proper use or not in use at all because of one problem or the other. The only materials that most of the schools have are chalk board and some white board. It was recommended that government through the Education Secretariat of FCT should among other things recruit more ICT/e – learning teachers to man all these facilities in the various junior secondary schools across the FCT. As part of the recommendations to the Education Secretariat, the existing teachers should be trained on the latest e – learning technologies and also equip the schools with modern ICT/e-learning facilities.

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