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Facilitators' Information and Communication Technology Competency for Facilitating Adult Learning in Literacy Centres in Delta State

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ABSTRACT

This study examined facilitators' Information and Communication Technology (ICT) competency for facilitating adult learning in literacy centres in Delta State with focus on the desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base). Two research questions and two null hypotheses guided the study. The descriptive survey research design was employed in the study. The population of the study comprised all the 492 facilitators, in the 67 adult literacy centres in Delta State. Sample size for the study consisted of 294 facilitators from 28 literacy centres selected using the multi-stage sampling technique. Data for the study was collected using a self-constructed questionnaire titled Facilitators' ICT Competency Questionnaire (FICTCQ), containing 19 items and was validated using face and construct validity while the reliability of the instrument was ascertained using the split half reliability approach with an index of 0.77. Data collated were analyzed using mean statistics rated at 2.50, and the standard deviation (SD) to answer the research questions. The t-test statistics was used in testing the hypotheses of the study. Findings of this study revealed among others that the male and female facilitators were incompetent in utilizing the utilizing various desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) technological devices, for facilitating adult learning in literacy centres in Delta State. There was significant difference between male and female facilitators in their ICT competency in utilizing these technological devices for facilitating adult learning. Based on the findings, it was recommended amongst others that the Delta State Agency for Mass Literacy, Adult and Non-Formal Education soliciting financial support from International Development Partners (IDPs) such as the United Nations, UNESCO, among others, should provide constant ICT-based training and retraining programmes on the use of different desktop and work stations, which aids in facilitating adult learning in the literacy centres.

Keywords: Facilitators, ICT, Competency, Facilitating, Adult, Learning, Literacy, Centres

Introduction

Facilitators' Information and Communication Technology (ICT) skills or competences are key factors for facilitating adult learning in the literacy centres. Facilitators' exposure to various ICT competences can be very useful for the attainment of the goals and objectives of adult education programmes. A facilitator, according to Nzeneri (2010), is a person who consciously and systematically administers the teaching-learning activities, programmes and the processes with the primary aim of assisting adult to learn. He or she is a trained professional in andragogical principles and methods, who facilitates adult learning in the literacy centres. Recently, more attentions and efforts seem to have been focused by concerned authorities such as the National Commission for Mass Literacy, Adult and Non-Formal Education (NMEC) towards promoting adult learning in the country. This is so because, adults play significant role in the development of any nation. They are one of the important populace or groups in the country that contribute to sustainable national development, that is, socioeconomic, political, cultural and environmental development of the Nigerian society. Given the important role(s) of adults in the human society, their learning which can be provided through adult education or literacy programmes at the literacy centres is very crucial to update and equip them with necessary information, skills and competences that will enable them to stay active to continuously function in the development of their society. Hence, the immediate growth and development of any society lies upon the adult populace, be they literate or illiterate; while children acquire education for the future investments and references (Nzeneri, 2010). Adult learning according to Pathania (2019), on the other hand, is the entire range of formal, non-formal and informal learning activities undertaken by adults and out of school youth, which result in the acquisition of new knowledge, skills and attitude. Adult learning which distincts from child education, is a practice in which adults engage in systematic and sustained self-educating activities in order to gain new forms of knowledge, skills, attitudes, or values. It focuses more on the self-directed learning process. It is defined as the practice of teaching and educating adults. Adult learning also refers to the education and training of matured learners through the provision of adult literacy programmes. Adult literacy programme denotes the entire body of learning processes, formal, non-formal and informal, whereby those regarded as adults by the society in which they live, develop and enrich their capabilities for living and working, both in their own interests and those of their communities, organizations and societies (Right to Education Initiative, 2021). Adult literacy programmes provides for citizens of Nigeria including those in Delta

State, the type of education that will promote literacy of the society. That is why stakeholders in adult education like the facilitators should focus attention towards providing quality and sound education to adult learners to enable them function effectively and participate in the socio-economic development of the country.

From the foregoing, the importance and benefits of adult literacy programmes cannot be overemphasized. All forms of adult literacy programmes which include functional literacy programmes, industrial education, remedial education, basic and post literacy programmes, in-service training programmes, vocational and technical education programmes, extension programmes, among others, as indicated by Adebola (2014) and Nzeneri (2010) have been established to cater for the various needs and problems of the Nigerian citizens. Adult literacy programmes provide education that will assist adult learners to improve their livelihoods, solve their personal and family problems, secure better employments, contribute to national development, among others. In fulfilment of the mission of adult literacy programmes in the Nigerian society, the Federal Republic of Nigeria (FRN, 2014) listed the goals and objectives of mass literacy, adult and non-formal education, which led to the establishment of various literacy programmes and centres in the country, they include: i. to provide functional literacy and continuing education for adults and youths who have never had the advantage of formal education or who did not complete their primary education; ii. to provide functional and remedial education for those young people who did not complete secondary education; iii. to provide education for different categories of completers of the formal education system in order to improve their basic knowledge and skills; iv. to provide in-service, on-the-job, vocational and professional training for different categories of workers and professionals in order to improve their skills; and v. to give the adult citizens of the country necessary aesthetic, cultural and civic education for public enlightenment. Given the above goals and objectives, adult literacy programmes provide education through the literacy centres for various classes or groups of people within the Nigerian society. Hence, the achievement of quality adult learning, coupled with the attainment of the goals and objectives of adult literacy programmes at the literacy centres which cannot be effectively actualized without adequate support and contributions from the facilitators whose competency in administering effective teaching methodologies through the use of information and communication technologies (ICT) for facilitating adult learning is very crucial and important. Furthermore, facilitators ICT competency is very crucial for facilitating adult learning in the literacy centres. This involves facilitators showcasing their skills, abilities and effectiveness in the use of various information and communication technologies (ICTs) towards facilitating adult learning. The Information and Communication Technology (ICT) since the 21st Century is beginning to make significant and positive impact in various sectors including the education sector in Nigeria. As technology advances in the society today, the need for utilization of various ICT tools such as mobile technological device, hard wares, desktop and work stations, computer basic software applications, wired and wireless network and connectivity, online apps, among others, have become essential. The ICT, furthermore, is any electronic device and application used to access, manage, integrate, evaluate, create and communicate information and knowledge. ICT incorporates the use of computers, multimedia and digital technologies, the internet, telephone, television, radio and audio-visual equipment, among others (Kpolovie, 2011).

The use of ICT in education embraces all physical objects, equipment or hardware, used for information processing or transmissions like computers, desktops and work stations, cellular phones, videos, DVD, CD players, flash drive, CD-ROMs and TV transmitters. It also includes publication outlets like e-books, e-journals or through personal Websites, among many others. ICT can as well, be grouped as, mobile technology (hardware), computer software applications, desktop and work stations, online networking technologies and other communication applications in all learning environment. Given the above examples of ICT tools, the use of ICT, specifically, desktops and work stations, likewise, wired and wireless networking connectivity (online database) in education including facilitating adult learning in literacy centres in the country and Delta State inclusive, attracts so many benefits and advantages, which can never be overemphasized. Communication technologies include all media employed in transmitting audio, video, data and multimedia such as satellite, cable, fiber optics, wired and wireless (radio, infra-red, Bluetooth, Wifi) network connectivity. Network technologies include personal area networks (PAN), campus area network (CAN) intranets, extranets and the Internet (Kpolovie & Wusaku, 2011). These ICT resources or devices have played important roles in promoting learning in schools and adult literacy centres where they are being utilized. The potentials of ICT as observed by Alfawaz and Ibrahim (2018) are that ICT play important roles in research, teaching and learning and general administration of any education sector. Again, many of these ICT tools are yet to be effectively utilized by many male and female adult education facilitators in the literacy centres in Delta State and beyond, therefore, affecting effective quality service delivery. In the adult literacy centres in Delta State, most of these ICTs such as the desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) are less being utilized or not even being utilized by facilitators, especially those in the basic and post literacy programmes, continuing education programmes and advanced classes. Facilitators who even make use of ICT, focus more on the mobile hardware technologies like the smart phones, ipads, tablets, among others, especially in the post literacy programmes at the centres in Delta State. They use hardware like smart phones in delivering instructions and conducting adult learners' assessment, among others. Majority of these facilitators seem not to be using the desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) which gives the researcher much concern towards investigating their ICT competencies in utilizing desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base). Besides, it has also been observed that many literacy centres in Delta State suffer a high rate of dropouts from the centres and as a result of which many of the centres, if facilitators are not using ICTs, will close down. If male and female facilitators are not using ICT at the centres, does it mean that, they do not possess enough competencies for effective application in facilitating learning or they have been influenced by the forces of gender and their sexes?

For some gender studies, male and female sexes towards the application of ICT differs, while for most studies there seem not any difference between gender. In view of this, the thrust of this present study is to assess male and female facilitators' ICT competency such as the desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) in facilitating adult learning in the literacy centres in the State. Most essentially, for facilitators to be able to promote adult learning in the literacy centres in Delta State, using various ICT tools like desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base), they must have to

first possess the knowledge and competency for using these modern technologies. Facilitators' ICT competency in utilizing desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) is in fact, for them to possess and have the ICT skills to become able to create clarity of instruction that can promote adult learning. Again, in the world today various information and communication technologies (ICTs) are making significant impact in different sector of the economy including the adult and non-formal education sector; this warrants facilitators' competency in ICT in utilizing desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) in order to boost adult learning. Facilitators' ICT competency as defined by Ali, Haolader and Muhammad (2013) and Kpolovie and Wusaku (2011) refers to the ability of a teacher to possess certain ICT skills in order to make use of the various ICT tools such as desktop and work stations technological devices likewise the various wired and wireless networking connectivity (online data base) which connects people through e-mail, the Internet, World Wide Web, intranets, extranets, online database and other networking technologies in teaching and research. It involves the skill of being able to handle a wide range of varying computer applications for various purposes. Successful incorporation of ICT like the desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) in the education system relies heavily on the competence and the attitude of teachers towards the role and use of modern technologies in teaching and learning. Thus, experienced facilitators at the literacy centres, newly qualified, and student-teachers need to be confident in using ICT effectively in their teaching. Simply having ICT in the literacy centres without facilitators competencies and adequate utilization will not guarantee their effective use. Despite the quantity and quality of technology placed in classrooms, the key on how those tools are used in facilitating adult learning is the facilitator. Therefore, facilitators must have the competence, skills and the right attitude towards utilizing technologies like the desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base). Benson (2013) observed that desktops and workstations computers are computers that cannot be carried about by users just as the mobile technological devices. Most times they are connected to the CPU, example is the desktop computer. The Computer Hope (2020) described the desktop computer as a computer that fits on or under a desk. It utilizes peripheral devices for interaction, such as a keyboard and mouse for input, and display devices like a monitor, projector, or television. Desktop computers can have a horizontal or vertical (tower) form factor, or be combined with a monitor to create an All-in-One computer. Unlike a laptop, which is portable, desktop computers are generally made to stay at one location. A desktop computer is designed for use at a single location and is usually comprised of a plastic-encased, metal frame to which the various components are anchored. This includes the power supply, motherboard, microprocessor, memory, and often a built-in optical disc drive for running software or viewing digital video disc (DVD) content (Thomas, 2020).

Examples of desktop computers as identified by Thomas (2020) includes Asus Chromebox 3, Acer Aspire TC series, Skytech Archangel, Minxneo N42 C-4, Apple Mac Mini, HP Pavilion TP01, Dell Inspiron 3471, among others. According to Benton (2013), desktop PC has enough power to do most tasks such as email, web surfing, and word processing. But a workstation has more power. It can handle CAD, animation, data analysis, and photorealistic renderings, as well as video and audio creation and editing. The internal workings of a workstation are held to a higher standard than those of a PC. Each part (motherboard, CPU, RAM, internal drives, video cards among others) is built with the understanding that it will be pushed hard all day long. In many cases, workstations are working on projects when all the humans have gone home. They are left to crunch large databases or create animations overnight. For the Britannica Encyclopedia (2020), the workstation is a high-performance computer system that is basically designed for a single user and has advanced graphics capabilities, large storage capacity, and a powerful microprocessor (central processing unit). A workstation is more capable than a personal computer (PC) but is less advanced than a midrange computer (which can manage a large network of peripheral PCs or workstations and handle immense data processing and reporting tasks). The term workstation is also sometimes ascribed to dumb terminals (i.e., without any processing capacity) that are connected to mainframe computers. Examples of the workstation computers include the Ergonomic workstation, Armories workstation, Network workstation and Portable workstation. Connections between computers on a network can be wired or wireless. Joshua and Joshua (2005) asserted that organizations, individuals and people rely heavily on the ability to share information throughout the organization and themselves in an efficient and productive manner. Computer networks or connectivity have allowed for this technology and are now a part of almost every business. An organization or individual has two options when it comes to setting up a network or connectivity. They can use a completely wired network, which uses networking cable to connect computers, or they can use a wireless network, which uses radio frequencies to connect computer. Wireless networks have allowed organizations to become more mobile therefore, organizations are now using a combination of both wired and wireless networks. The basic hardware layout for the two types of networks or connectivity are fairly similar but for an organization to go wireless it requires a few more hardware components. Although networks provide convenience, they do open the organization up to security and privacy risks. If a company is faced with a security, they are ways that they can fix and prevent future security risks. From the above, Joshua and Joshua (2005) illustrated the meaning of both the wired and wireless network or connectivity. Wired networks, also called Ethernet networks, as identified by Joshua and Joshua, are the most common type of local area network (LAN) technology. A wired network is simply a collection of two or more computers, printers, and other devices linked by Ethernet cables. Ethernet is the fastest wired network protocol, with connection speeds of 10 megabits per second (Mbps) to 100 Mbps or higher. Wired networks can also be used as part of other wired and wireless networks. To connect a computer to a network with an Ethernet cable, the computer must have an Ethernet adapter (sometimes called a network interface card, or NIC). Ethernet adapters can be internal (installed in a computer) or external (housed in a separate case). Some computers include a built-in Ethernet adapter port, which eliminates the need for a separate adapter (Microsoft).

A wireless network according to Joshua and Joshua (2005), uses high-frequency radio waves rather than wires to communicate between nodes, and is another option for home or business networking. Individuals and organizations can use this option to expand their existing wired network or to go completely wireless. Wireless allows for devices to be shared without networking cable which increases mobility but decreases range. There are two main types of wireless networking or connectivity; the peer to peer or ad-hoc and infrastructure (Wi-Fi.com). An ad-hoc or peer-to-peer wireless network or connectivity consists of a number of computers each equipped with a wireless networking interface card. Each computer can communicate directly with all of the other wireless enabled computers. They can share files and printers this way, but may not be able to access wired LAN resources, unless one of the computers acts as a bridge to the wired LAN using special software. An infrastructure wireless network or connectivity consists of an access

point or a base station. In this type of network or connectivity, the access point acts like a hub, providing connectivity for the wireless computers. It can connect or bridge the wireless LAN to a wired LAN, allowing wireless computer access to LAN resources, such as file servers or existing Internet Connectivity. (compnetworking.about.com). Cisco Network (2021) described a wireless network connectivity allows devices to stay connected to the network but roam untethered to any wires. Access points amplify Wi-Fi signals, so a device can be far from a router but still be connected to the network. Computers can make a wireless connection if they have a wireless NIC. A wireless router provides a connection with the physical network. A computer device needs to be within range of the router to get access. A wireless connection uses radio signals to send data across networks. The wireless adapter converts the data into a radio signal and the wireless receiver decodes it so that the computer can understand it. Wireless transmissions can be intercepted by anyone within range of the router. Access can also be restricted to specific MAC addresses, and transmissions are usually encrypted using a key that works with WPA (Wi-Fi protected access). A wireless network uses radio waves to connect devices such as laptops and mobile phones to the Internet and to your business network and its applications. When an individual connects to a Wi-Fi hotspot at a cafe, a hotel, an airport lounge, or another public place, the person is connecting to that business's wireless network. A wired network as disclosed by Cisco Network (2021) on the other hand, uses cables to connect devices, such as laptop or desktop computers, to the Internet or another network. Another example, connecting printer cable to laptop or desktop is also a wired connectivity. Computers can be connected through Ethernet cables which connect to the Ethernet port. Connecting hardware such as a router has Ethernet ports. A wired network has some disadvantages when compared to a wireless network. The biggest disadvantage is that the device is tethered to a router. The most common wired networks use cables connected at one end to an Ethernet port on the network router and at the other end to a computer or other device. Previously it was thought that wired networks were faster and more secure than wireless networks, but continual enhancements to wireless network technology such as the Wi-Fi 6 networking standard have eroded speed and security differences between wired and wireless networks.

When facilitators do not make adequate use of ICT tools such as the desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) in facilitating adult learning, this would make the achievement of instructional objectives difficult, especially in this present time that the education sector is experiencing challenges coupled with the COVID 19 pandemic. This also means that learners will only be exposed to theory without practical knowledge making them passive learners who are not active or integrated into the learning process in the literacy classroom. For a facilitator to facilitate learning in the literacy centre using varieties of ICT tools, such facilitator needs to showcase great level of competence and skills towards using any desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) technology in order to promote adult learning. The present study sought to find out if there are differences in male and female facilitators in ICT competency. Most empirical studies seemed to have identified that role of gender in ICT competency of male and female sexes. Some of these studies seem to have been supportive that there are differences between male and female gender ICT competency, while some of these empirical studies indicated that there is no difference between ICT competency of male and female. However, gender as defined by UNESCO (2020) and World Health Organization (WHO, 2021) refers to the roles and responsibilities of men and women that are created in families, societies and cultures. The concept of gender also includes the expectations held about the characteristics, aptitudes and likely behaviours of both women and men (femininity and masculinity). The concept of gender is vital because, applied to social analysis, it reveals how women's subordination (or men's domination) is socially constructed. As such, the subordination can be changed or ended. Based on the above explanations, it becomes imperative to study gender and how it influences facilitators' ICT competency and application in utilizing desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) in the literacy centres in Delta State. From the foregoing, it has become imperative to assess the male and female facilitators' ICT competency with particular reference to their skills and abilities to utilize desktop and work stations, including, wired and wireless network and connectivity, for facilitating adult learning in literacy centres. Although, previous empirical studies like those of Bamidele (2014), Egomo, Enyi and Tah (2012), Jegde, Dibu-Ojerinde and Ilori (2007), Obakhume (2010), Ololube (2006) and Onasanya, Shehu, Ogunlade and Adefuye (2011) have been conducted in different areas/aspects of ICT and gender, all these studies have their own mix, differences, findings and shortcomings which warranted the present study. It is against this background that the researcher sought to investigate facilitators' ICT competency focusing on the desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State.

Statement of the Problem

The Information and Communication Technology (ICT) which includes the application of technologies such as desktop and work stations, wired and wireless network and connectivity, examples of which include Internet, E-mail, chatting, Skype, teleconferencing, video conferencing, and their likes, has made classroom communication including facilitating adult learning in the literacy centres easy and interesting. Never minding the rapid growth and remarkable changes in the education system which ICT has brought in the twenty-first century, yet, in most of the educational institutions or organizations within Nigeria including in the adult literacy programmes and centres in Delta State, there seems not to have been any remarkable evidence of the use of ICT in facilitating adult learning in the literacy centres. The fact that various ICTs have been employed for educational purposes in the past decades, it seems as if there has not been any remarkable evidence of its impact on facilitation of adult learning in literacy centres. Preliminary examination revealed that various ICTs which includes the desktop and work stations, wired and wireless network and connectivity, seem not to have been utilized by many male and female adult education facilitators in literacy centres in the State. This situation seems to be evident in the poor quality of service delivery at the centres. If male and female facilitators are not using ICT at the centres, does it mean that, they do not possess enough competencies for effective application in facilitating adult learning in the literacy centres or they could have been influenced by the forces of gender and their sexes? In view of this, it has become imperative to obtain empirical evidence on the male and female facilitators competency in utilizing ICTs in facilitating adult learning in the literacy centres in the Delta State, focusing on the desktop and work stations technological devices including the various wired and wireless networking

connectivity (online data base). It is against this backdrop, that this study was designed to assess facilitators ICT competency for facilitating adult learning in literacy centres.

Purpose of the Study

The purpose of this study was to examine facilitators' ICT competency for facilitating adult learning in literacy centres in Delta State with focus on the desktop and work stations technological devices including the various wired and wireless networking connectivity (online data base). Specifically, the study sought to:

1. Determine male and female facilitators' competency in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State.

2. Find out male and female facilitators' competency in utilizing various wired and wireless networking connectivity (online database) for facilitating adult learning in literacy centres in Delta State.

Research Questions

The following two research questions were raised to guide the study:

1. What is the male and female facilitators' competencies in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State?

2. What is the male and female facilitators' ICT competencies in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State?

Hypotheses

The following two null hypotheses were formulated and tested at 0.05 level of significance in the study:

H_{01}: There is no significant difference between the mean rating scores of male and female facilitators on their competency in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State.

H_{02}: There is no significant difference between the mean rating of male and female facilitators in their competency in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State.

Method

The descriptive survey research design was employed in the study. This research design was considered suitable for the study because it enabled the researcher to use a research instrument, that is, the questionnaire, to collect data from a representative sample of the targeted population of facilitators in the literacy centres in Delta State. Besides, the design enabled the researcher collect data to describe them in a systematic manner based on the characteristics and features or facts about target population and generalization drawn based on the findings. The population of the study comprised all the 492 facilitators, in the 67 adult literacy centres in Delta State. Out of this population, 290 were male facilitators and 202 were female facilitators (Planning, Research and Statistics Department, Delta State Agency for Adult and Non-Formal Education, 2021). This was the number of male and female facilitators in 67 Literacy Centres within 25 LGAs in Delta State as at July, 2021. Sample size for the study consisted of 294 facilitators from 28 literacy centres selected using the multi-stage sampling technique. In this case, the researcher wrote out the names of each of the 25 LGAs in Delta State on a piece of paper, put them into a container and reshuffled them. After reshuffling them, a research assistant was asked to pick 13 LGAs out of the 25 LGAs placed into the container. At every selection made, before the next selection by the research assistants was made, the remaining papers were reshuffled which is sampling by replacement. In the second stage, purposive sampling was used to select 28 functional literacy centres within 13 LGAs in Delta State. In the third stage, simple random sampling was used to select a total of 294 facilitators from 28 literacy centres within the 13 LGAs in Delta State. A breakdown shows that 177 male and 117 female facilitators were used for the study. This constitutes 80% of the total number of facilitators in 28 literacy centres within the 13 LGAs in Delta State. This is in line with the Nworgu (2015) assertion that any sample which ranged from 10% to 80% is representable and enough in situations where there is a large population in a study. As regard, the sample used in the present study is sizeable enough to conduct the study. Data for the study was collected using a self-constructed questionnaire titled Facilitators' ICT Competency Questionnaire (FICTCQ) containing 19 items. The response options on the questionnaire was structured on a 4-point modified Likert-type scale of Highly Competent (HC) – 4, Competent (C) – 3, Fairly Competent (FC) – 2 and Incompetent (IC) – 1 in order to answer all the research questions. The questionnaire was validated by three experts from the Department of Adult and Non-Formal Education, Faculty of Education, University of Benin, Edo State including a Measurement and Evaluation expert in the same Faculty. Few corrections were made on the questionnaire by the experts based on double-barrel items, content coverage and sentence/language construction. The corrections made in the instrument by the experts after the validity were incorporated into the instrument before the final print out and administration on the respondents.

Reliability of the instrument was determined using the split half reliability approach. In this case, the instrument was administered once to a sample of 25 male and female facilitators (15 males & 10 females) from 5 literacy centres in Delta State, which were not part of the study. After that, their responses were separated into two equal parts with odd number responses on one side and even number responses on the other side. Data obtained were computed using the Cronbach Alpha statistics which gave internal consistency reliability coefficients of 0.77. Information were collected from the respondents through a direct, hand-delivery and face to face contact with the respondents. The instrument was handed over to the respondents by equally maintaining the COVID-19 guidelines and rules made by the Nigerian Centre for Disease Control (NCDC). These includes, the use of face mask and hand sanitizer, hands washing and maintaining 3 meters social distancing. An on-the-spot method was employed as well, which enabled the researcher and the five research assistants to meet the respondents, that is, individuals who met the facilitators in their respective literacy centres to wait and collect the necessary information from them. Efforts were made to retrieve the research instrument. The five research assistants selected within the 3 Senatorial Districts in Delta State were instructed on how to collect the necessary information from the facilitators using the questionnaire. At first, both the researcher and research assistants took permission from the centre coordinators before administering the questionnaire to the facilitators. Distributing the questionnaire to the respondents was carried out within an interval of three weeks. The rate of return of the total number of the copies of the questionnaire distributed and retrieved from the 216 facilitators was calculated at a 100% rate of return before applying the appropriate statistical instrument for data analysis. Data collated were analyzed using mean statistics rated at 2.50, the standard deviation (SD). The mean score and SD were used in answering the research questions in order to discover male and female facilitators' competencies in utilizing various ICTs (desktop and work stations; wired and wireless networking connectivity) for facilitating adult learning in literacy centres within the 25 LGAs in Delta State. The decision rule for taking decisions on the items on the questionnaire was that, any mean score which rated at 2.50 and above, was regarded to be in support of the statement and therefore, considered as competent. Meanwhile, any mean score that rated below 2.50, was regarded as not in support of the statement and therefore, termed as incompetent. The t-test statistics was used in testing the hypotheses of the study. In this case, data collated to answer the research questions on facilitators' competency in utilizing various ICT devices for facilitating adult learning in literacy centres within the 25 LGAs in Delta State were hypothesized. However, the t-test statistics was used to test all the hypotheses at an alpha level of 0.05 level of significance. Hypotheses 1-2 were tested using the t-test statistical tool of 0.05 level of significance. The justification for using the t-test statistics was to determine the significant difference between the mean ratings of the male and female facilitators in the literacy centres within 25 LGAs of Delta State. The decision rule was based on the premise that the null hypothesis was accepted only if the *P*-value is greater than alpha, while it is not accepted where *P*-value is less than alpha. More so, data collated were coded into the SPSS (Statistical Software Package for Social Sciences), version 23 batch system for computer analysis.

Results

Research Question 1: What is the male and female facilitators' competencies in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State?

Table 1: Mean and Standard Deviation Scores of Male and Female Facilitators' Competencies in Utilizing Desktop and Work Stations for Facilitating Adult Learning in Literacy Centres in Delta State

S/N	Items	Male $\overline{x}$	SD	Remark	Female $\overline{x}$	SD	Remark
1.	Turning on a desktop computer	1.97	0.85	Incompetent	1.85	0.97	Incompetent
2.	Connecting a monitor, mouse or keyboard to the desktop in order to execute a task	2.02	0.89	Incompetent	1.97	1.15	Incompetent
3.	Inserting a flash drive into a desktop computer to save document	1.97	0.89	Incompetent	1.85	0.80	Incompetent
4.	Putting a DVD disc into a desktop computer to assess educational information already saved	2.40	1.06	Incompetent	1.86	0.95	Incompetent
5.	Saving or retrieving a file or an article from the desktop computer	2.23	1.11	Incompetent	1.80	0.98	Incompetent
6.	Viewing digital video disc (DVD) content using a desktop computer	2.00	1.04	Incompetent	1.62	0.85	Incompetent
7.	Printing an instructional material from a desktop computer	2.12	1.09	Incompetent	2.09	0.86	Incompetent
8.	Using a workstation computer to execute a special task or function	1.93	1.00	Incompetent	2.21	1.21	Incompetent
9.	Turning off a workstation computer	1.97	1.04	Incompetent	2.00	0.86	Incompetent
	Grand Mean/SD	**2.07**	**1.00**	**Incompetent**	**1.92**	**0.96**	**Incompetent**

Male = 177, Female = 117

Result of Table 1 indicates the mean and standard deviation scores of male and female facilitators' competencies in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State. The items were rated below a mean score of 2.50 by male and female facilitators. The analysis further shows that both male and female facilitators are incompetent in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State. However, male facilitators appear to be better than their female counterparts in the ratings. The evidence of male and female facilitators' incompetency in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State is demonstrated in a grand mean score of 2.07. The grand standard deviation scores of 1.00 and 0.96 for both male and female facilitators respectively reveal they had same opinion on their competencies in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State.

Research Question 2: What is the male and female facilitators' ICT competencies in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State?

Table 2: Mean and Standard Deviation Scores of Male and Female Facilitators' Competencies in Utilizing various Wired and Wireless Networking Connectivity (Online Data Base) for Facilitating Adult Learning in Literacy Centres in Delta State

S/N	Items	Male		Remark	Female		Remark
		$\bar{x}$	SD		$\bar{x}$	SD	
10.	Ability to use LAN wired connectivity in order to share educational files and assignments within learners	1.92	1.04	Incompetent	1.71	0.87	Incompetent
11.	Ability to use WAN wired connectivity in order to connect to a World Wide Web browser to search for important information	1.60	0.85	Incompetent	1.86	0.95	Incompetent
12.	Using wired connectivity with printers	2.06	1.04	Incompetent	1.91	1.06	Incompetent
13.	Using a fax machine connected to a computer device for sending information within the Local Area Network	2.15	1.04	Incompetent	2.06	1.11	Incompetent
14.	Surfing with Internet wired connectivity in order to sought information for any topic presented in the class	1.80	0.87	Incompetent	2.10	1.09	Incompetent
15.	Using Wi-Fi wireless connectivity to browse and share important educational files among learners	1.76	0.94	Incompetent	2.11	1.02	Incompetent
16.	Ability to utilize peer to peer or ad-hoc wireless connectivity consisting of a number of computers each equipped with a wireless networking interface card to share files and printers	2.29	1.08	Incompetent	1.98	0.94	Incompetent
17.	Ability to use infrastructure wireless network or connectivity consisting of an access point or a base station	2.18	1.10	Incompetent	2.00	1.07	Incompetent
18.	Bluetooth connectivity to share files with learners	1.96	0.96	Incompetent	2.04	0.95	Incompetent
19.	Connecting a projector to a Desktop computer so as to facilitate learning	1.89	0.96	Incompetent	1.85	0.87	Incompetent
	Grand Mean/SD	**1.96**	**0.99**	**Incompetent**	**1.96**	**0.99**	**Incompetent**

Male = 177, Female = 117

Analysis on Table 2 reveals male and female facilitators' ICT competencies in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State. The items were rated below a mean score of 2.50 by male and female facilitators. The ratings show that male and female facilitators are incompetent in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State. The grand mean score of 1.96 for male and female facilitators indicates their ICT incompetency in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State. More so, the grand standard deviation score of 0.99 for male and female facilitators respectively indicates that they had similar view in their response as regards to competencies in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State.

Test of Hypotheses

Hypothesis 1: There is no significant difference in the mean rating scores of male and female facilitators on their competency in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State.

Table 3: t-test of Difference in the Mean Rating Scores of Male and Female Facilitators on their Competency in Utilizing Desktop and Workstation for Facilitation

Gender	N	X	SD	df	t	Sig	Decision
Male	177	41.9	7.3	292	-3.449	.001	Significant
Female	117	44.8	6.9				

p < 0.05

Analysis on Table 3 showed that t-test to test the difference in the mean rating scores of male and female facilitators on their competency in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State. The analysis further revealed a significant difference given that t = -.3.449, and p < 0.05 (.001 < 0.05), the null hypothesis was rejected, thus, there is a significant difference in the mean rating scores of male and female facilitators on their competency in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State is significant.

Hypothesis 2: There is no significant difference between the mean rating of male and female facilitators in their competency in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State.

Table 4: t-test of Difference in the Mean Rating Scores of Male and Female Facilitators on their Competency in Utilizing Wired and Wireless Networking Connectivity for Facilitation

Gender	N	X	SD	Df	t	Sig	Decision
Male	177	42.6	7.6	292	-2.862	.005	Significant
Female	117	45.5	10.0				

P < 0.05

Analysis on Table 4 indicated that t-test was run to test the difference in the mean rating scores of male and female facilitators on their competency in utilizing various computer basic software applications for facilitating adult learning in literacy centres in Delta State. The analysis revealed a significant difference given that t = -2.862, and p < 0.05 (.005 < 0.05), the null hypothesis is rejected, hence, there is a significant difference in mean rating scores of male and female facilitators on their competency in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State.

Discussion of Findings

It was discovered through the finding of this study that male and female facilitators were incompetent in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State. The hypothesis test of this finding revealed that the difference in the mean rating scores of male and female facilitators on their competency in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State is significant. This means that both the male and female facilitators differ in their ICT competency in utilizing desktop computers and work stations. Both were not at the same par level. The finding also indicated that the male and female facilitators were incompetent in turning on a desktop computer and in connecting a monitor, mouse or keyboard to the desktop in order to execute a task. They were incompetent in inserting a flash drive into a desktop computer to save document and in putting a DVD disc into a desktop computer to assess educational information already saved. They were incompetent in saving or retrieving a file or an article from the desktop computer. They were further incompetent in viewing digital video disc (DVD) content using a desktop computer. They were not competent in printing an instructional material from a desktop computer. They were neither competent in using a workstation computer to execute a special task or function nor in turning off a workstation computer.

This finding concurs and is equally in line with a study conducted by Obakhume (2010) which found out that most of the teachers lack the knowledge and competence to use ICT to facilitate the teaching and learning process. The above finding is in line with another similar study conducted by Bamidele in (2014) on the access and use of information and communication technology for administrative purposes by institutional administrators in Colleges of Education in Nigeria, using an example of Emmanuel Alayande College of Education, Oyo which found out that the level of ICT usage of the institutional administrators for administrative purposes was very low. The present study hypothesis test of significant difference in the mean rating scores of male and female facilitators on their competency in utilizing desktop and work stations for facilitating adult learning in literacy centres in Delta State is also similar

with Ololube (2006) study which revealed that there were significant differences in the effectiveness between professionally trained teachers and untrained teachers in their ICT instructional competences. When the male and female facilitators are highly competent to utilize different desktops and works stations, this will assist them to facilitate adult learning for the attainment of educational goals and objectives.

It was found out that the male and female facilitators were incompetent in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State. The hypothesis test of this finding showed that the difference in the mean rating scores ratings of male and female facilitators on their competency in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State is significant. This means that both the male and female facilitators differ in their ICT competency in utilizing various wired and wireless networking connectivity (online data base). Both were not at the same par level. This finding further revealed that both male and female facilitators were incompetent in their ability to use LAN wired connectivity in order to share educational files and assignments within learners. They lack the ability to use WAN wired connectivity in order to connect to a World Wide Web browser to search for important information. They also lack the competency in using wired connectivity with printers, likewise, in using a fax machine connected to a computer device for sending information within the Local Area Network. They were incompetent in surfing with Internet wired connectivity in order to sought information for any topic presented in the class. The male and female facilitators were incompetent in using Wi-Fi wireless connectivity to browse and share important educational files among learners. They lack the ability to utilize peer to peer or ad-hoc wireless connectivity consisting of a number of computers each equipped with a wireless networking interface card to share files and printers. They also lacked the ability to use infrastructure wireless network or connectivity consisting of an access point or a base station. They were neither competent in utilizing Bluetooth connectivity to share files with learners, nor in connecting a projector to a Desktop computer so as to facilitate learning.

This finding corroborates with the studies of Jegede Dib-Ojerinde and Ilori (2007) and Onasanya, Shehu and Adefruye (2011) which found out that the level of computer literacy of science teachers in Oyo State was low. Their level of utilization of ICT resources was also low. The male outperformed their female counterpart in both instances although the level was low. But in the case of the present study both the male and female had similar competency level in utilizing various wired and wireless networking connectivity (online data base) for facilitating adult learning in literacy centres in Delta State. Sam (2009) study confirmed that majority of in-service teachers lack competences in core technology areas. The finding from a study carried out by Egomo, Enyi and Tah (2012) on availability and degree of utilization of ICT tools for effective instructional delivery in tertiary institutions in Cross River State revealed that availability and utilization of ICT tools for effective instructional delivery was significantly low. Cyber Cafes, internet connectivity and use of lap tops was a common phenomenon among institutions and lecturers. The competencies in the use of ICT tools among lecturers was discouraging. However, lecturers from University of Calabar differed significantly from their counterparts from Nuga Poly and COE (A) in terms of utilization and competence of ICT tools. The study hypothesis test on significant difference between the male and female facilitators in their ICT competency in utilizing various wired and wireless networking connectivity (online database) does not deviate and concur with this previous study. However, with facilitators' ICT competency in utilizing various wired and wireless networking connectivity (online data base), this will create room for improvement in facilitating adult learning.

Conclusion

The present study generally concludes that the male and female facilitators were incompetent in utilizing various ICTs, specifically, the desktop and work stations including wired and wireless networking connectivity (online database) for facilitating adult learning in literacy centres in Delta State. As such there is need for improvement on facilitators' competency towards the use of ICT in order to promote adult learning in the literacy centres in Delta State. Moreover, facilitators' ICT incompetency showcased in their lack of utilizing various ICTs like the desktop and work stations, including wired and wireless networking connectivity, for facilitating adult learning in literacy centres in Delta State. More so, the male and female facilitators differed on their competency in utilizing the various desktop and work stations including wired and wireless networking connectivity (online database), for facilitating adult learning in literacy centres in Delta State. The present study therefore submits that, the male and female facilitators were incompetent in utilizing various ICTs in the literacy centres in Delta State. Left in this poor situation which is responsible by some factors, makes it difficult for facilitating adult learning so as to effectively actualize the goals and objectives of adult education in Delta State. This poor situation makes it difficult for quality education coupled with effective adult learning delivery to triumph and be sustained in the literacy centres in Delta State. Conversely, when facilitators are competent in utilizing the various ICTs, this would make positive impact in facilitating adult learning because they would be able to source and secure resources that will improve their competencies in the classroom, therefore, adult learning and performances will be highly improved. So, therefore, the issues concerning facilitators ICT competency cannot be overlooked.

Recommendations

The following recommendations have been proffered from the findings of the study:

1. The Delta State Agency for Mass Literacy, Adult and Non-Formal Education soliciting financial support from International Development Partners (IDPs) such as the United Nations, UNESCO, among others, should provide constant ICT-based training and retraining programmes on the use of different desktop and work stations, which aids in facilitating adult learning in the literacy centres.

2. Delta State government in collaboration with some of the ICT-based private organizations or enterprises should organize training programmes for male and female facilitators competency in utilizing wired and wireless networking connectivity (online data base) which has added advantage in facilitating adult learning in literacy centres in Delta State.

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