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The Extent of E-Readiness of NCE Technical Teacher Training Institutions in North-Eastern States of Nigeria

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Abstract

The study assessed the availability, functionality and adequacy of ICT infrastructural facilities, tools and equipment; ICT proficiency level of the lecturers and the extent of ICT Resources utilization for academic activities at the NCE Technical Teacher Training Institutions in North-Eastern Nigeria. Descriptive Survey Design was used for the study. Three research questions were formulated in line with the objectives of the study. The Data collected were analyzed using appropriate statistical tools. The results obtained revealed that though, NCE Technical Teacher Training institutions in the North-Eastern Nigeria have adequate ICT infrastructural facilities for e-learning activities, yet they are not e-Ready with regard to their lecturers' level of ICT proficiency and the extent of ICT resources utilization for academic activities. It was recommended that the ICT facilities at the NCE Technical Teacher Training Institutions should be upgraded to meet the required standard based on the international practice, the lecturers should endeavour to acquire the required competency through personal efforts to achieve the desired proficiency in the use of ICT facilities for academic purposes and also that the management of the institutions should as a policy, compel the lecturers and students to use ICT facilities during teaching and learning sessions, and for extra-curricular activities where possible.

Keywords: E-Readiness, NCE Technical, ICT Proficiency, ICT facilities, ICT Resources,

1. Introduction

Vocational and Technical Education (VTE) is a comprehensive term referring to those aspects of the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of the economic and social life. It comprises of education, training and skills development relating to a wide range of occupational fields, production, services and livelihoods. VTE is concerned with the acquisition of knowledge and skills for the world of work (Bakri & Zakaria, 2018), It is an important element in determining the future direction and pattern of a country, and a vital instrument that can help to improve the quality of the workforce by nurturing the knowledge and skill needed in industries (Asiabaka, 2018). VTE programme has a pertinent contribution to the enhancement of country's competitiveness in today's globalized world. One of the most important features of VTE is its orientation towards effective psychomotor skills training. The

manipulative skill concerned with direct experimentation or production with psychomotor skill ensures the acquisition of employable skills (Amanchukwu & Ololube, 2015). According to the Nigerian National Policy on Education (NPE), teaching of technical subject shall be practical, activity-based, ICT based and experimental (FRN, 2013). Also Okwelle (2011), asserts that the quality of learning outcome demonstrated by students of any VTE training programme will determine the extent to which behavioural or instructional objectives have been achieved. "Technical and vocational education (TVE) has been an integral part of national development strategies in many societies because of its impact on productivity and economic development" (Uwaifo, 2010).

An education system has to be suited to the demands of the technological age so that a competitive edge can be maintained (Agboola, 2014). Zakaria & Iksan (in Yaro, 2013) assert that "in preparing the students of today to become successful individuals of tomorrow, teachers have the responsibility of structuring the student's learning activities and goals to ensure effective and up to date knowledge is passed to the students". With the introduction of ICTs, developing nations envision the elimination or improvement of age-old barriers they face, such as their geography, high cost of and limited access to quality information, communication limitations, non-transparent governance and, of course, education (Oliver, 2011). The introduction of e-learning has indeed revolutionized teaching and learning process at all levels of our educational system by making knowledge more accessible to all. This knowledge is highly needed in colleges of education where lecturers teach the would-be-teachers (Ifeakor & Anujeonye, 2012). The federal government of Nigeria also recognizes IT as a strategic imperative for national development and taking cognizance of its immense benefits, it has resolved to provide considerable national resources, both financial and otherwise for the realization of the National IT Vision statement. (NNPIT, 2001). According to Yaro (2013), In Nigeria, the training of technical personnel has witnessed formidable challenges, ranging from poor funding to inadequate facilities both quantitatively and qualitatively, non-availability of adequate human resources, brain drain and poor staff training and retention profiles. Others include weak university/industry partnership, defective curricula, traditional approach to teaching, poorly equipped laboratories, poorly monitoring standards for the training of prospective technologists and an inadequate ICT environment.

The availability and utilization of workshop facilities depends largely on management techniques that are implemented in the workshops. Management according to Nwosu (2014) is the process that involves some activities like planning, organizing, coordinating and controlling in order to use available resources to advance a desired outcome in the fastest and most efficient way. Uzoagulu (2016) affirmed that, the proper management of workshop tools enhances students' skill acquisition during workshop practice. The use of a workflow pattern in workshop facilities management will provide avenue for proper monitoring and utilization of the facilities, which in turn provides a platform for the students to gainfully acquire the needed skills required

of them as prospectus teachers of technology. The actualization of the goals and objectives of education requires provision, maximum utilization and appropriate management of the facilities. The primary purpose of education is to bring about the desirable behavioural change in the learner thorough critical thinking (Kingsley, 2019). Learning facilities management as a process ensures that infrastructures and other systems support the fundamental operations desired to be carried out. This can be achieved through the use of a suitable ICT tools and equipment that will facilitate the operational procedures and safety measures.

2. Statement of the Problem

Murphy and Greenwood (2021), indicated that "research findings suggest that Information and Communication Technology is significantly under-used by students and teachers. The National IT Vision emphasized on the critical role that ICT should play in the socio-economic development of Nigeria (NNPIT, 2017). Wheeler, 2017, Dada, 2018, Oliver, 2021 and Anderson, 2021 have cited some of the reasons for the low ICT use in schools to include unavailability and/or inaccessibility of resources in schools; the scarcity of opportunity to use computers by students and teachers; lack of experience and training in using ICT at the pre-service level; the lack of teacher or teacher trainers' encouragement to students on using ICT in schools and the lack of confidence on the part of student-teachers and their trainers in computing skills. Anderson (2018) asserts that today, parents and guardians are not satisfied with the IT proficiency level of the teachers that teach their children in schools considering the global trend of computer driven economy and the era of on-line programmes including external examinations, admission into tertiary institutions, recruitments for employment, businesses and banking. The NCCE being the regulatory body for all NCE awarding programmes and institutions makes computer literacy mandatory for lecturers in Colleges of Education, which serves as a yardstick for their progression in the job (NCCE/ETF, 2021).

2.1 Objectives of the Study

1. The availability and adequacy of the infrastructural facilities for ICT usage at the NCE (Technical) Teacher Training Institutions in North-Eastern states of Nigeria.
2. The ICT proficiency of the Lecturers at the NCE (Technical) Teacher Training Institutions in North-Eastern states of Nigeria.
3. The level of ICT facilities utilization for academic activities at the NCE (Technical) Teacher Training Institutions in North-Eastern states of Nigeria.

2.2 Research Questions

1. What is extent of the availability and adequacy of ICT infrastructural facilities at the NCE (Technical) Teacher Training Institutions in North-Eastern states of Nigeria?
2. What is extent of the Lecturers' ICT proficiency at the NCE (Technical) Teacher Training Institutions in North-Eastern states of Nigeria?
3. What is extent of the ICT facilities utilization for academic activities at the NCE (Technical) Teacher Training Institutions in North-Eastern states of Nigeria?

2.3 Significance of the Study

The findings will help the lecturers and the management of the Institutions to identify their strengths and weaknesses in terms of availability, adequacy, functionality and proficiency level of their ICT instructional capacity. This will assist them in formulating and planning of ICT training and facility improvement programmes in their various institutions.

The lecturers in the institutins will be aware of the expected technical competencies and the challenges ahead of them in their quest for new innovative knowledge that will keep them at relevance with the current trend of instructional delivery in line with internationally accepted practice. It will also serve as a guide to the NCCE, being the regulatory body of the NCE programmes in Nigeria, to assess the status of the various NCE awarding institutions in order to facilitate professional development activities based on respective institutions' level of e-Readiness. The study will also assist the Federal Government to be aware of the existing facilities for ICT- instructional utilization in the institutions, which will indicate the extent to which the objectives of ICT policy are being achieved by the respective institutions. This will help the government to determine the next step to be taken in ICT integration policy planning and implementation, especially in the education sub - sector.

4. Methodology

The procedure employed in the study comprise the following:

- Design of the Study: Descriptive Survey Design
- Area of the Study: North-East geopolitical zone of Nigeria
- Population of the Study: 154 Lectures out which 146 were analyzed
- Sample size: The entire population was used
- Instrument of Data Collection: Checklist and Questionnaire
- Validation of the Instrument: Face & Content by three experts
- Reliability of the Instrument: Pilot test at Plateau Poly & FCE (T) Bichi
- Method of Data Collection: 1 checklist/Instn. & questrs for all lecturers

- Method of Data Analysis: Percentage, Mean and Standard Deviation

5. Results and Discussions

R/Q 1: The result of the findings indicated that there are adequate ICT infrastructural facilities, tools and equipment available for e-Learning activities at the NCE Technical Teacher Training Institutions in North-Eastern Nigeria.

R/Q 2: The result indicated that the lecturers are less proficient in most of the ICT tasks required for e-Learning activities at the NCE Technical Teacher Training Institutions in North- Eastern Nigeria.

R/Q3: The overall result indicated that ICT resources are scarcely utilized for academic activities in the Institutions at the NCE Technical Teacher Training Institutions in North-Eastern Nigeria.

Based on the result obtained, it was concluded that though, NCE Technical Teacher Training institutions in the North-Eastern Nigeria have adequate ICT infrastructural facilities for e-learning activities, yet they are not e-Ready with regard to their lecturers' level of ICT proficiency, extent of ICT resources utilization and adequacy of NCE Curriculum-content support for ICT based academic activities.

6. Recommendations

The ICT facilities at the NCE Technical Teacher Training Institutions should be upgraded to meet the required standard based on the international practice. This will make the institutions to provide adequate and effective up-to-date knowledge to the students who will then be able to compete favourably with their counterparts anywhere in the world. The lecturers should endeavour to acquaint themselves with the required competency through personal efforts, and the authorities of the institutions should encourage them further by way of training and re-training to achieve the desired proficiency in the use of ICT facilities for academic purposes. The management of the institutions should as a policy, compel the lecturers and students to use ICT facilities during teaching and learning sessions, and even for extra-curricular activities where possible. The more they engage in the ICT facility utilization, the more competent they will become.

References

Adesina, R.D. (2014). Curriculum in Technical Education for Nigerian Education System. Makurdi: Welfson Press.

Adrienne, W. (2018). Project Implementation Overview. Project Management. Pressbooks. From https://ecampusontario.pressbooks.pub

Amanchukwu, R. N. & Ololube, N. P. (2015). Managing school plant for effective service delivery in public secondary schools in rivers state of Nigeria. Human Resource Management Research, 5(4): 95-102. From: http://www.sciencepub.org

Amaratunga R. D. G. (2011) titled "Theory Building in Facilities Management Performance Measurement:: Towards a Process Model. *Paper presented at COBRA* 99 *RICS Conference.* Salford. Pp *40 – 56*

Anderson, J. (2020). The Adaptive Character of Thought. Hillsdale, New Edition. NJ: Erlbaum Associates.

Bakri A & Zakaria I. H. (2018). Uplifting the Function of Maintenance Management towards Sustainable Performance of Laboratory and Workshop in TVET Institutions. *The Journal of Social Sciences Research*. Academic Research Publishing Group

Basuki, Yoto, Marsono, Agus Suyetno, Riana Nurmalasari,(2021). "Management Model of Manufacturing Workshop/Laboratory of Vocational Education in the Industry 4.0, Electrical Electronics and Information Engineering (ICEEIE) 2021 7th International Conference, pp. 217-225

Bello, H. and Shuaibu, B. (2013). State of Facilities for Teaching Electrical Installation and Maintenance Work Trade in Technical Colleges in Bauchi State, Nigeria. International Journal of Vocational and Technical Education, 5(5): 82-91.

Buchori, A., Setyosari P., Dasna, W. & Ulfa, S. (2020). Mobile Augmented Reality Media Design with Waterfall Model for Learning Geometry in College. International Journal of Applied Engineering Research Vol. 12, no. 13 (2017). Research India Publications. From http://www.ripublication.com

Cadwell, C. M. (2015). Training That Works! A Guide to On-The-Job Training. Revised Edition, Coastal Training Technologies Corporations. USA. Virginia Beach

Chen Z. (2017). The Principles of Facilities Management and Case Studies. 3rd ed. Oxford: Blackwell Publishing Ltd.

Cornford, I. R. (2020). The defining attributes of 'skill' and 'skilled performance': Some implications for training, learning, and program development. Australian and New Zealand Journal of Vocational Education Research, 4(2), 1-25.

Creative Safety Supply, CCS (2021), 5S Training and Research Page. LLC, 8030 SW Nimbus Ave, Beaverton, from: https://www.creativesafetysupply.com

David; G. & Bill, H. (2019). "The growth of software testing". Communications of the ACM. f*rom* https://en.wikipedia.org/wiki/Software_testing

Dennis A., Wixom B. H. & Roth R. M. (2011). System Analysis and Design. Fifth Edition John Wiley & Sons, Inc. Http://www.wiley.com/College/Dennis

Federal Republic of Nigeria (FRN, 2013). National Policy on Education. 6th edition. Lagos NERDC Press

Gaynor G. (2017) "Managing technology and innovation," in *IEEE Engineering Management Review*, vol. 45, no. 4, pp. 15-17, Fourth Quarter Edition.

Gayy, L. R. (2016). Educational research, competences, for analysis and application. (12th Ed.). Merrill, NJ: Prentice Hall.

Imhanzenobe J. (2021). A Review of the Management Science Theory and its Application in Contemporary Businesses. African Journal of Business Management. Vol. 15(4), pp. 133-138 from http://www.academicjournals.org/AJBM

Jane Itohan Oviawe, Raymond Uwameiye, Patrick S. O. Uddin. (2021) Bridging Skill Gap to Meet Technical, Vocational Education Workplace Collaboration in the 21st Century. International Journal of Vocational Education and Training Research. Vol. 3, No. 1

Jansen. D (2020). Four-Step Training Process. From: http://robertroman.com/resources/Jansen.pdf

John W. Horch (2015). "Two Orientations on How to Work With Objects." In: IEEE Software. Wiley Publishing. From https://en.wikipedia.org/

Jolly, T (2019). Employee productivity and how to manage it. Journal of Resources Development and Management from: https://www.linkedin.com

Jones G, R., & George J. M. (2021). Contemporary management and Resource control t (9th ed.). New York: McGraw-Hill Education.

Kaner, C.; Falk, J.; Nguyen, H. Q. (2019). Testing Computer Software (2nd ed.). New York: John Wiley and Sons f*rom* https://en.wikipedia.org/wiki/Software_testing

Kingsley, O. V. (2019). Management of learning facilities. New Trends and Issues Proceedings on Humanities and Social Sciences. Vol 6 (7), pp 082–087. Available from: www.prosoc.eu

Krippendorff, K. (2011). Computing Krippendorff's Alpha-Reliability, Post-print version. Retrieved from https://repository.upenn.edu/asc

M. Salleh, S., Musa, J., Jaidin, J. H., & Shahrill, M. (2020). Application of the Technology Acceptance Model. *Journal of Technical Education and Training*, 13(2), 25-33. from https://penerbit.uthm.edu

Marjor-Rita, A. O. (2018). Vocational Technical Teacher Education. Problems and Prospects. Unpublished Paper Presented at the 6th Annual Conference of Nigeria Vocational Association at Federal College of Education (Technical) Omuoku

Mark Preston (2020). System Development Life Cycle Guide. Cloud Defense. 579 University Ave, Palo Alto, CA 94301 from https://www.clouddefense.ai/blog/

Michalska, J. & Szewieczek, D. (2021). The 5S methodology as a tool for improving the organization. *Journal of Achievements in Materials and Manufacturing Engineering*. Vol. 24 Issue 2from: http://jamme.acmsse

Michigan Technological University, MTU (2021). System Development Life Cycle (SDLC). From https://www.mtu.edu

NCCE (2012). NCE Minimum Standard for Vocational and Technical Education. 2020 edition NCCE Abuja

Nwachukwu C. E. (2011). Designing appreciate methodology in vocational and technical education for Nigeria: Nsukka: Fulla du Publishing Company.

Odigbo, C. I. (2019). A New Approach to Educational Administration Planning and Supervision. Onitsha: Cape Publishers International Ltd.

Ogbuanya, T.C. (2021). Vocationalizing the New Senior Secondary School Education Curriculum. Unpublished Paper Presented at a Workshop Organized by NERDC to sensitize Senior Secondary School Teachers in Ebonyi State on the new Senior Secondary Education Curriculum Structure, content and mode of implementation.

Ogbuanya, T.C., Nweke, J.N. and Ugwoke, S.C. (2017). Material Resource Management for Effective Teaching of Electrical/Electronic Technology in Colleges of Education (Technical) in Nigeria. *International Journal of Applied Engineering Research* Vol. 12, No. 18. From https://www.ripublication.com

Pankash P. (2019). Difference between Traditional and Agile Software Development. GeeksforGeeks Noida, Uttar Pradesh. From https://www.geeksforgeeks.org

Pedemkar, P. (2020). What is the Iterative Model? EDUCBA from https://www.educba.com

Pressman, R., (2017), Software Engineering: a Practitioner's Approach. 7th Edition, New York : McGraw-Hill

Rashmi K. R_1, Dr.K.V.A.Balaji$_2$, Mr.Yashwanth H.S (2018). A Study of Implementation of 5S In an

Reigeluth, C. M. (2021). (Ed.), Instructional-design theories and models: An new paradigm of instructional theory, Volume II.. Mahwah, NJ: Lawrence Erlbaum Associates.

Robert M. Gagne (2019). Task analysis - its relation to content analysis, Educational Psychologist, 11:1, 11-18 From https://www.tandfonline.com

Timothy J. E. & Yair L. (2010). A Guide for Novice Researchers: Design and Development Research Methods. Proceedings of Informing Science & IT Education Conference (InSITE) 2010. Nova South University, Florida, USA from: https://citeseerx.ist.psu.edu

University of southern California, USC (2021), Research Guides from: https://libguides.usc.edu

Uzoagulu, A.E (2019). Effective Management of Material Resources in Technology Education Programmes. A New Approach to Educational Administration, Planning and Supervision. Onitsha: Cape Publishers International Ltd.

Uzoagulu, A.E. (1993). Towards an effective equipment management in schools for economic and technological self-reliance. *Nigeria vocational Journal*, 6,25-32.

Wasson C. S. (2016). System Analysis, Design and Development. Concepts, Principles, and Practices. Hoboken, New Jersey. A John Wiley & Sons, Inc., Publication

Wikipedia (2019). The free encyclopedia from https://www.en.wikipedia.org/wiki/Workflow

Wishdesk (2019). What is the iterative design approach & how can it benefit your project? InternetDevels. Bozhenka, Lutsk, Ukraine from https://wishdesk.com/blog

Yekinni S. A (2016). Management of Electrical/Electronic Workshop Accident in Technical Colleges in Oyo and Ogun States, Nigeria. *UNN Journal of Information Engineering and Applications.* Vol.6, No.9, from https://www.iiste.org

Yekinni S. A (2016). Methodological Needs of Electrical/Electronic Workshop Accident Prevention in Technical Colleges in South Western Part of Nigeria. *UNN Journal of Information Engineering and Applications.* Vol.6, No.9, from https://www.iiste.org