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ICT-Training Initiative and Workforce Productivity Re-Invention in Edo State Universal Basic Education Board (2016 – 2019)

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Abstract. Information Communication Technology (ICT) as one of the pillars of contemporary modernization has touched almost all areas of human endeavours. The rapid development of new technologies built around ICT initiatives has brought about organizational and behavioural change especially in the educational sector, where new technologies are deployed in the process of knowledge transfer. As a focal point in the process of knowledge transfer, teachers' capacity in ICT handling is paramount. With the *Edo Basic Education Sector Transformation* (EdoBEST) initiative, primary school teachers' handling of ICT facilities was addressed via compulsory training. In view of the above, the paper *examined the level of workforce engagement via ICT training for optimum productivity in EDO SUBEB, and also to investigate the barriers to effective workforce ICT training for maximum productivity in EDO SUBEB.* The paper adopted the qualitative research method via the medium of semi-structured interview in gathering relevant data for the study. The study discovered amongst others that, younger EdoBEST teachers were more open to the ICT training initiative, the study also noted that, new model of teaching was introduced to the teachers during the EdoBEST training for optimum productivity. The study thus recommends amongst others that, the training of EdoBEST teachers should be a continuous process in order to stay informed with modern educational practices.

Keywords: Workforce, ICT-training, productivity, EdoBEST, absenteeism, workers turnover.

1. Introduction

Workforce training in an organization (both public or private) is a very essential activity of Human Resource Management (HRM). It is geared towards an increase in the organisation's output. It was not until the aftermath of the second world war that the issue of training as a strategic tool and program for effective organizational performance began to take hold of management in the organization (Luo, 2000). According to Samwel (2018), workforce training is one of the vital tools that help to enhance effective organizational productivity and at the same time helps to promote the stability index of the organization. In order to perform a specialized function, a form of specialized education is needed which is meant to give the trainee a particular strategic knowledge, skill and improve attitude towards effective organizational performance (Nebo et al, 2015). Training involves the acquisition and changing of specific skills, knowledge, attitude and social behavior for the purpose of work engagement (Aroge, 2012). To Dennis and Griffin (2005), workforce training refers to the planned attempt by an organization to facilitate employee learning of job related knowledge, skills and behaviours. As humans evolve so also are the ways and modes of doing things. Advancement in science and technology has opened numerous angles to knowledge and skill acquisitions. Information, Communication Technology (ICT) is one of the numerous advancements in contemporary time.

ICT have become key tool and had a revolution impact on how we see the world and how we live. Today, the place of ICTs in education and the world in general cannot be undermined. Modern day

businesses are conducted and facilitated through the use of telephones, fax machines and computer communication networks through the internet (Ajayi and Ekundayo, 2009). This phenomenon has given birth to the contemporary e-commerce, e-government, e-medicine, e-banking and education among others. According to Bandele (2006), ICT is a revolution that involves the use of computers, internet and other tele - communication technology in every aspect of human endeavour. Ajayi and Ekundayo (2009) posited that ICT is simply about sharing and having access to data with ease. It is regarded as the super highway through which information is transmitted and shared by people all over the world.

The field of education has certainly been affected by the penetrating influence of ICT worldwide and developed countries in particular. ICT has made a very profound and remarkable impact on the quality and quantity of teaching, learning research in the educational institutions (Ofodu, 2007; Ajayi and Ekundayo, 2009). The United Nation Education Scientific and Cultural Organizations (UNESCO, 2004) stressed that ICT has turned from being a technology of communication and information alone, but to a curriculum creation and delivery system for educators and learners. For Schiller and Tillett (2004), ICT enhances possibility by providing what teachers are able to do, by providing an entry point into the content and enquiries that were not possible without the use of ICT, by extending what students are able to produce and as a result of their investigations and by providing teachers with the opportunities to become learners again. It has made it possible for complicated collaborative activities of teaching and learning by dividing it in space and time with seamless connectivity between them (Olelewe & Amaka, 2011).

The Nigerian National Policy for Information Communication and Technology (FRN, 2001) emphasizes the need for the implementation of ICT tools in education for three major objectives viz:

- to empower the students with ICT skills.
- to prepare the students for competitiveness in a global environment, integrating ICT into the mainstream of education and training.
- establishment of multifaceted ICT institutions as centres of excellence.

The document specifically noted the need for restructuring the educational system of all levels to respond effectively to the challenges of the 21st century where the global life is being digitalized. For the above listed objectives to be meaningfully realized, it means that ICT tools must be properly and judiciously utilized in the teaching and learning processes in public schools (especially public primary schools in Edo State). Hence, the Edo Basic Education Sector Transformation (EdoBEST) initiative which is meant to develop skills in primary and junior secondary schools teachers via strategic ICT training. According to Wadi and Sonia (2004), proper and effectiveness of information and communication technology tools in Edo State public schools (primary and junior secondary) will definitely improve the quality of education in several ways such as increasing teachers' motivation and engagement, facilitating the acquisition of learner's basic knowledge and skills and also to enhance teachers training. Hence, this paper tends to address the issue of ICT - training initiative and workforce productivity re-invention in Edo State Universal Basic Education Board (EDO SUBEB) within the period (2016 - 2019).

1.1 Statement of the Problem

Today, workforce training especially in the public sector has been seen as a very important tool in enhancing engagement and productivity in a work environment. Every organization (both public and private) across the globe wants to make the best utilization of its human resources in order to achieve maximum productivity and gain competitive advantage. The employees who enhance their skills through training in this case ICT capacity building of public primary school teachers are more likely to engage fully in their work, because they derive satisfaction from mastering new tasks. ICT training of workforce in public primary schools is meant to provide a lot of benefits to the organization such as productivity, improved teaching quality, reduced employee turnover, reduced absenteeism, motivates and engage students in learning to help relate school experiences to work practices, strengthens teaching amongst others.

Ironically, despites the huge benefits of ICT in education especially basic education in Nigeria and the enormous financial resources budgeted for training of workforce in public primary schools each year, the level of workforce commitment and productivity remains at the ebb compared to other developing country's basic education system e.g. Ghana, South Africa and Rwanda. Drawing from the aforementioned, the following research questions becomes necessary; what is the level of workforce engagement via ICT training for optimum productivity in Edo SUBEB? What are the barriers to effective workforce ICT training for maximum productivity in Edo SUBEB? To what extent has ICT

training reversed the trend of lack of productivity amongst workers in Edo SUBEB?

1.2 Objectives of the Study

In a bid to appropriately navigate the course of this study, the following objectives are necessary:

- To investigate the barriers to effective workforce (teachers) ICT training for maximum productivity in Edo SUBEB.
- To examine the level of workforce engagement via ICT training for optimum productivity in Edo SUBEB.
- To examine the extent ICT training has reversed the trend of lack of productivity amongst workers in Edo SUBEB

1.3 Methodology

This paper employed the qualitative method of data gathering in evaluating the subject matter under investigation. A semi-structured interview was conducted amongst Edo Basic Education Sector Transformation (EdoBEST) primary and junior secondary school teachers in Edo state which has an estimated population of 13,000. And due to the covid19 pandemic, the researcher was able to interview a few number of teachers which includes the Chairman Edo SUBEB Board. The selection of the interviewed respondents was based on the non-probabilistic or convenience technique. A desk analysis was employed in analyzing information gotten from the respondents. Also, secondary data analysis was utilized. The secondary data source includes; journal articles, newspapers, magazines, government gazettes amongst others.

2. Conceptual Framework

2.1 Workforce Training

Workforce training can also be considered as a careful strategic undertaking by an organized institution to upgrade employee's knowledge on the job, behaviour, attitude and skills towards the organization goals and objectives (Dennis and Griffin, 2005). Oliseh (2005) also posited that, training is the development of the attitude and skills required by an individual in order to perform adequately a given task in a strategic and systematic pattern. According to Ogbu and Osanaiye (2017), organizations needs training to drive innovation and shift from conservative application of knowledge to more progressive styles leading to increased productivity and performance in terms of organizational output. Workforce training is also a medium where organizations anticipate future events and plan for them through rigorous training of their staff or employees.

2.2 Information Communication Technology (ICT)

The national policy on information technology (FGN, 2001) defines ICT as any equipment or interconnected system of equipment used in the automatic acquisition, storage, manipulation, management, control, and transmission of information. In a related view ICT is conceptualized as communication in whatever form used, accessed, relayed and transmitted (Olorundare, 2006). ICT comprises a range of technologies and their applications, including all aspects of the use of computers, micro-electronic devices, satellite and communication technology (Commonwealth Secretariat, 1991). Thus, ICT are tools that comprise electronic devices that are utilized for the information needs of institutions, organizations, and individuals. The electronic devices include information machines for example, computer hard and soft wares, networking, telephones, video, multimedia and the internet (Ibara, 2010). ICT covers products of communication technology that stores, retrieves, manipulates, transmits or receives information electronically in a digital form (Ibara, 2010).

2.3 Technology Education

Technology education (ICT training) being the major focus of this work, hinges its thrust in the type of education a group of persons (teachers) receive to enable them become acquainted with the practical use of available technology (Okenjom, Oga, Bake and Eze-Anyim; 2016). It is a study of technology which provides an opportunity for teachers and students to learn about the processes and knowledge related to technologies that are needed to solve problems and extend human potential (International Technology Education Association (ITEA), 2000). Here, human ability is used to shape and change the physical world to meet needs by manipulating materials and tools with techniques.

The inculcation of this type of education to teachers will invariably revamp the fate of technology education in secondary schools as the right education that will be geared towards useful living among secondary school students will be given to them for functional development (Okenjom et al, 2016). Technology education develops interest and curiosity among the students. It provides not only theoretical knowledge to the students but also make them

professionally skilled in subject by providing practical knowledge (Okenjom et al, 2016).

2.4 Productivity

Ikeanyibe (2009) cited in Mustapha, Edegware and Onya (2018), posits that productivity is a measurement or calculation of input and output ratio. Inputs are the amount of resources such as human resources, money, time, physical, technology and effort spent working in the organization, while output are the results. If the inputs are equivalent to the outputs, the worker is considered productive. But this paper conceptualization of productivity takes a different turn from the input-output economist model. The paper look at productivity from the lens of public administration which has to do with the value received from public services in return from the utilization of public funds. Public sector productivity is mainly measured in labour productivity which connotes human resource involvement and commitment to ensuring the effective and efficient administration of public goods and prudent governance (Paula, et al, 2010). Productivity in this regard could include behavioural/attitudinal change, technological innovation, work ethics, amongst others.

3. Theoretical Framework

The Human Capital Theory (HCT) constitutes the theoretical construct for this study. The Human Capital Theory was propounded by Schultz (1961) and later expanded by Becker in 1993. This theory is deemed suitable for the study based on the fact that, humans are considered a resource and of most importance to organizational success and growth. Thus, with human capital viewed as a resource, the issue of competitive advantage being fostered by skilled and knowledge base employee is of crucial importance. Becker (1993) claims a foundation stone of human capital theory is its suggestion and drives towards education and training of workers or employees by optimally introducing new and tangible set of informative and knowledge which invariably have a positive effect in their organizational performance, productivity and salary structure.

Human capital theory sees training in an organization as a form of investment by management with a choice made on its process and which is predicated on its costs and benefits to the organization (Becker, 1993). Organizations also invest in training in its early stages and subsequent periods with a view to reaping its dividends at a later date in terms of optimum output productivity. Becker also views human capital as synonymous to other means of production such as machineries and office buildings. He opinioned further that human capital can be invested on through the means of training, education, health care services amongst others, which has a great role to play in the determination of the organizational output and productivity. That is to say, human capital is viewed as a means of production which, if invested into diligently, will ultimately yield additional output for the organization. According to Tamkin (2005), relating the resource based conceptualization to training brings out the deduction that, training can usually be seen as crucial investment for organization, which provides the much-needed expertise in work environment and the addition of value to organizational performance thus giving a positive output to the organization.

4. Human Resource Management and Employee Training

Capacity building and staff development is underpinned in the area and jurisdiction of the human resource department which at its core is a pertinent element of human resource management (Weil and Woodall, 2005). As opined by Nadler “all human resource development activities are meant to improve performance of the present job of the individual, train new skills for new job or new position in the future and general growth for both individuals and organization, so as to be able to meet organization’s current and future objectives” (Nadler 1984:16).

Many scholars (Gordon, 1992; Beardwell, Holden and Claydon, 2004) acknowledged the fact that training which is an integral part of human resource management has a great advantage to both staff and the organizational growth and development. The proper, effective and coordinated management of employees in the environment of work is commonly acknowledged as human resource management (Armstrong, 1996).

As a main emphasis for analysis and intellectual review, human resource management has appeared to become an important element and instrument for modern organisations, thus, leading to strategic relationship between the variables - employees and the organization (Armstrong, 1996). Beer et al (1984), operationalized human resource management as the interrelatedness of all organizational management policies and programme that influences and the affiliation that exist between the employees and the organization. Buttressing their point of operationalization further, they argued that, the day to day decision and policies made by management of an

organization, set the precedent which tends to affect management and employees and in turn help create a viable mapping system for strategic human resources management engagement in the organization. This relationship according to them if properly harnessed can lead to achievement of organizational goals and objectives.

5. ICT Training and Teachers Productivity in Nigeria

One of the challenges in the application of ICT in Nigeria education system (that is, moving from the traditional way of educational application to modernized practices) is the poor knowledge of the teachers and instructors in using the systems gadgets (Oduma and Ile, 2014). Although ICT in Nigeria education systems is gradually attracting the attention of the government, institutions, teachers and learners, teachers' knowledge of application of system does not match the ovation. This is a critical handicap in the use of ICT in Nigeria education system. Richmond (2002) noted that ICT training or education implies learning about computer and the internet, and designed to popularize ICT literally among beneficiaries. ICT education also refers to the creation of human resources to meet the IT needs of the knowledge economy. This involves training of teachers on the knowledge of the tools and machines of ICT that is used in education. The essence of ICT education for teachers is to increase the number of ICT awareness amongst the teaching workforce. In Nigeria for instance, there are no enough manpower to handle and utilize the ICT systems in both the secondary and tertiary levels of our education system (Ololube, Ubogu and Ossai, 2011).

The teachers need to be re-skilled and re-branded in line with the technological skill and competencies required for effective use of ICT in teaching and learning. This strategic approach will definitely help educational institutions to have a pool of manpower to address educational needs and job opportunities in computer hardware and software (Oduma and Ila, 2014). Nigeria today, is among the many countries progressing towards the goal of education for all, but still struggling to achieve teacher quality for all especially in remote areas of the country (Kayode, 2010). Teachers therefore, should be properly groomed in the use of ICT in order to stress their relevance in the face of growing advances in Information Communication Technology. Interestingly, the Federal and State Ministries of Education have in recent times been acquiring new and outstanding instructional technologies that impact human life. The most important of them is information technology (Kayode, 2010).

The Nigerian education system has been faced with lots of challenges. The increased number of pupil and students' enrolment, increase in the amount of educational activities being carried out easily through information and communication technologies, changes in the nature of teaching and learning becoming gradually web based, electronic journals, on-line sources of material are among the few challenges for Nigerian teachers (Blurton, 2002; Oduma and Ile, 2014). Above all, the role and responsibilities of the education system especially at the tertiary level include teaching, research and service to humanity and society.

The teaching role of the education system reflects their centrality in addressing the primary education mission. Precisely, the main aspect of education responsibilities through the teachers include: classroom teaching, course development, counselling, academic programme review, etc. In all these activities, the ICT has a very vital role to play either by influencing their content and structure or by providing important information to enrich the process and content (Blurton, 2002). If ICT tools are to enrich or improve educational institutions effectiveness and efficiency, it is obvious that ICT literacy for teachers in Nigeria education system be urgently given a priority attention.

6. ICT Training and EDO SUBEB Workforce Engagement Level

The introduction of ICT into Edo state public primary and junior secondary schools popularly known as Edo Basic Education Sector Transformation (EdoBEST) has signaled an innovative vision towards modernizing the educational sector in Edo state since its inauguration fin 2018. As the contracted facilitator of the ICT training program, the Bridge International Academy (BIA), has trained over 12,000 teachers and 1200 headteachers out of the 15,000 government teachers in Edo state as at 2019 on the handling or usage of ICT facilities in reinventing productivity in the educational system in Edo state (BIA, 2020). The objectives of the Edo state government as regard EdoBEST according to BIA (2020) are:

- To enhance lesson delivery and teacher-pupil interaction using study guide.
- Checking on every child's learning, that is, helping those who are struggling with one-to-one guidance.

- Responding with feedback that accelerates learning.
- Motivating children towards good behaviours and academic effort.

In order to facilitate engagement and productivity amongst primary and junior secondary school teachers in Edo State, adequate training is paramount. For better understating of EdoBEST teachers engagement via training in ICT for optimum productivity, a semi-structured interview process was conducted and will be discussed under the following sub-headings; *the need for training of EdoBEST teachers* and *the impact of ICT training and the extent it has reversed the trend of lack of productivity amongst EdoBEST teachers*.

The Need for Training of EdoBEST Teachers

With the objectives of EdoBEST as aforementioned, the need for training especially in ICT became necessary. Identifying training needs is very crucial in any organization especially in the education sector where teachers are supposed to be trained and retrained to meet required acceptable standards which the Human Capital Theory advocates. Identifying the gap between standard performance and actual performance defines the need for training. McConnell (2003) posits that training needs analysis is required when there are changes in the system or in the work, when new technology is introduced, when new government's standards are introduced, when there is decline in the quality of work or performance, when there is lack of skills and knowledge and when there is lack of motivation. In this case as outlined by McConnell is the issue of new technology introduction and lack of skills and knowledge in operating the new technology, hence the need for training and investment in development of workforce which is one of the corner stone of HCT.

Reacting to the training, the interview process made some interesting findings. It was discovered that, the notion of previous knowledge linkage to the new training is important. In the interviews conducted, most of the interviewees argued that majority of the younger EdoBEST teachers as opposed to the elderly teachers were more open and excited to the ideal of the training process. This according to them was due to the prior knowledge these younger teachers possess in ICT. Buttressing the aforementioned information further, Nwosu et al (2018) argued that in Nigeria, studies have shown that lack of ICT training prevented teachers from using ICT in teaching. In the same vein, Stephen (2013) argued that, both primary and secondary school teachers in Nigeria did not use ICT in teaching because of lack of previous knowledge or basic knowledge. Scholars (Amuche and Iyekekpolor-Solomon, 2014; Nwosu et al, 2018) also argued that, one of the main factors that inhibit the use of ICT in teaching in Nigeria is lack of knowledge on how to use ICT tools among teachers. Thus, the study noted that the disposition of EdoBEST teachers in embracing ICT in the educational section in Edo state is primarily based on prior knowledge of ICT.

In analyzing the data obtained as regard the training content of EdoBEST teachers, the interview process shows a tremendous improvement and enhancement in the teachers skills, knowledge, behaviours and experiences as explained by the Human Capital Theory. Buttressing the stand for human development, the Governor of Edo state Godwin Obaseki in one of the strategy meetings which the researcher was part of was of the opinion that,
"*any politics that doesn't develop its human capacity is bad. Massive investment must be channeled toward a productive workforce especially training and retraining of teachers in order to reposition the state in the part of progress and development*"

In the light of the statement of intent of Governor Obaseki, the study discovered that, as one of the objectives of EdoBEST, teachers were trained in modern techniques of teaching and classroom management. Some of the new ideals in the technological driven model include, introduction of the *character board* which is utilized primarily for motivations of pupils and students via recognition measurements such as early resumption to school, answering of questions in class correctly amongst others. Applauding of pupils and students for answering questions correctly was also encouraged. Apart from the character board, teachers were also enlightened on educational songs and rhymes. Technologically, the teachers were trained on how to handle electronic tablets given to them for the purpose of marking attendance (teachers and pupils), receiving of teaching guides and sending of both test and examination scores back to central administration. Teachers were also trained on how to interact with pupils and students that are "behind" intellectually. Supporting the above information, one of the interviewees opined that,
"*since the introduction of EdoBEST programme, teachers especially primary and junior secondary school teachers have been given the opportunity to develop their capacity in technology for the purpose of ensuring teaching performance. She argued further that, both teachers, pupils and students have*

been affected positively by the initiative and its content"
The study therefore shows that, the training contents of EdoBEST teachers were focused on the four objectives of the programme.

The Impact of ICT Training amongst EdoBEST Teachers

The impact of training describes results that contains an organization's ability to learn, alter, and improve in agreement with its specified objectives (McNamara, Joyce and O'hara, 2010). 'So how has the training impacted EdoBEST teachers? In assessing the degree to which the training programme has affected and reversed the trend of lack of productivity amongst EdoBEST teachers in terms of behavioural and attitudinal change which is one of the nuances of the Human Capital Theory, the study discovered that the interviewees were quick to mention *punctuality* as paramount in the behavioural change pyramid. With the e-register of teachers attendance to class, absenteeism in EdoBEST public primary schools has been reduced to the barest minimum, thus improving the punctuality level towards a positive behavioural change of EdoBEST teachers. Speaking on the issue of teachers punctuality an interviewee argued that:
"with the EdoBEST initiative, teachers are scared of losing their jobs because of the e-attendance register and constant supervision. She further said that, there is no longer room for absenteeism resulting from flimsy excuses"
Another noticeable change is the reduction and "near" total elimination of "corporal" punishment of pupils and students of EdoBEST. The traditional model was tilted towards corporal punishment but the new modernized technological model is tilted towards more enlightened punishment like *detention* - which is based on extra-lesson activities. The change also affects teachers interaction with the pupils and students. This behavioural change involves the teachers awareness about their pupils and students via the e-attendance register, hence creating a familiar teacher - pupils relationship.

Also, absenteeism of teachers is now a thing of the past, due to strategic supervision and monitoring. On both short and long term, pupils' supervision by teachers have also improved. This could be captured in a media briefing with the Edo state governor where the Chairman Edo SUBEB board Dr. Joan Osa Oviawe opined that,
"astute supervision of pupils even down to their homes has led to the repatriation of a pupil allegedly married out to a man in the Northern part of Nigeria, after a diplomatic engagement between the governor of Edo state and the Northerner state governor, thus leading to the continued education of the pupil in the state".
Modern styles and techniques has also been noticed. Teachers are more open to motivate their pupils via the utilization of the character board. Teachers' ability to handle ICT facilities has improved greatly, which could be noticed in the area of e-study guide to assist pupils' parents with smart phones and gadgets in teaching their children during the Covid 19 pandemic lockdown. According to one of the interviewees,
"…many teachers that undergo the EdoBEST training programme have been able to put their new skills and knowledge into practice during the Covid19 pandemic lockdown, thereby justifying the success of the initiative so far"

In a nutshell, EdoBEST teachers have been more productive in utilizing modernized model of teaching as compared to the traditional model and training of workforce can be attributed to the success of EdoBEST.

7. Conclusion

Organisational and behavioural change via the medium of training as one of the nuances of Human Capital theory is paramount for the technological advancement in the educational system in Nigeria, and Edo state in particular. With the introduction of EdoBEST initiative in Edo SUBEB which invariably led to organization and behavioural change amongst management and teachers, the study thus concludes that, EdoBEST initiative has re-invented productivity which was hitherto hampered by unproductive parameters such as absenteeism, lack of commitment, amongst other unproductive behaviours. Furthermore, productivity amongst teachers and management of EdoBEST according to respondents interviewed and experiences of parents can be said to have been re-invented to a large extent as a result of the introduction of ICT facilities.

8. Recommendations

With the findings and conclusions of this investigation, the paper thus recommends the following;

- For optimum productivity to be achieved in Edo SUBEB, the concept of sustainability of the EdoBEST initiative must be upheld irrespective of regime change.

- The training of EdoBEST teachers should be a continuous process in order to stay informed with modern educational practices.
- Continuous maintenance and upgrade of ICT facilities at Edo SUBEB is needed and paramount to ensuring productivity amongst EdoBEST teachers and administrators.
- Rural areas should also be included in EdoBEST initiative so as to have an all-inclusive developmental educational system in Edo state.

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