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Impact of e-learning on Employability Development of Vocational Technical Education Pre- Service Teachers for National Security

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Abstract

This paper examined the impact of e-learning on employability development of Vocational and Technical Education (VTE) Pre-service Teachers for national security. As employability skills is highly required for one to be a successful VTE Teacher and Technician or technologist. Employability Skills are usually not formally taught as part of the VTE curriculum content. The coming of e-learning as innovation in VTE will provide graduates' opportunities to acquire these employability skills if the lecturers employed this method in teaching. This paper focused on VTE Teachers Training Programmes in Nigeria, e- learning techniques, employability skill needs of VTE teachers and the impact of e-learning on employability skills development for national security. It has become necessary for VTE Lecturers to employ e-learning as one of the methods of training VTE Teachers. Because of the advent of knowledge economy, e-learning has been one of the high priorities promoted in higher education with the hope of bringing innovations that enhance quality in education. This work has a great impact to pre-service teacher of VTE programme as the knowledge of e-learning can build employability skill which they can apply in teaching after graduation.

Keywords: e – learning, employability, pre-service teachers, vte, national security

INTRODUCTION

The development of any nation is critical to the technological and economic survival and vibrancy of that nation. This holds particularly true for developing nation like Nigeria, who is still struggling with factors like unemployment, economic frustration, poverty and crises among the citizenry (Uwaifo, 2009). For a nation to be saved from the menace that is pointing danger on the existence of people there is a need for Vocational and Technical Education and training (VTET). FRN (2004) recognizes VTE as that part of the total educational system which leads to the acquisition of practical and applied skill and scientific knowledge. The national policy of education attaches a lot of importance to VTE, for it is the nation's spring board for the acquisition of relevant skills for technological and economic development with regards to the demand for skilled manpower. The policy maintained that VTE is designed and incorporated in the three stages of education with a view to meet the nation's need for skilled manpower and support the economic state of individual students and the nation as well. The production of quality skill manpower resulted from classroom as teachers formed a pivot in which the production of quality skill manpower can be realized. Afe (2002) observed that the challenge of teacher training appears to be the most daunting challenge facing the education system in general. This has been observed by researchers who have reiterated that out of all the educational problems that beset the Africa continent today, none is as persistent or as compelling as the one relating to the training of competent teachers. These teachers are bound directly or indirectly to influence the quality and quantity of services provided by all skilled personnel, as poorly trained teachers tent to produce their own kind. It is sad to note that the quality of technology teachers produced from training programmes have failed short of expectation of producing VTE graduates with right skills needed for technological and economic development of the nation and to free the nation from insecurity. This is clearly seen from the output of the graduates. Therefore, it has become necessary and timely to emphasize on quality assurance of technology teachers' training programmes for sustainable technology development in Nigeria.

Atsumbe and Saba (2008) affirmed that, it is a well known fact that effective learning in theory, practical and affective work skills in VTE has immensely contributed to the technology excellence and economic self-reliance of individuals and industrialized nations. They further stressed that one of the main purpose of VTE programmes is to help individual students to develop desirable and effective work attitudes, acquire the necessary knowledge and skills of an occupation, enter and progress in the

occupation. Okoro (2006) said that education should lead not only to the acquisition of cognitive knowledge and psychomotor skills but to the development of appropriate attitude. He further says that any education that does not promote the right value and attitude to work, life and the society is of limited value. In today's economic knowledge information and communication, customer service and relation, innovation and high performance which formed employability skills are at premium, it is also essential for gaining employment or to be self-employed and to progress in it throughout one's lifetime. Education is developed throughout life and career and can be acquired at work, through study and through participation in family and community life.

Employers frequently comment on the need for their recruit to possess abilities other than those relating to the academic or technical knowledge of the discipline graduates studied. Employers placed high value on graduates being able to communicate effectively, work in a team, be self starter, and be critical thinker and problem solver. The self reliance graduate is aware of the changes in the world of work, takes responsibilities for his or her career and personal development and ability to manage the relationship with work learning throughout all stages of life. Employability skills are usually not formally taught as a course in VTE curriculum content; this made students to graduates without necessary employability skills, despite their outcome being invariably sought after by employers and the public at large (Afe, 2002).

This study will be of serious help in broadening the pre-teacher knowledge on e-learning in other to apply the concept in teaching of VTE. Since insecurity has become a major challenge in Nigeria, the use of e-learning will build employability skill in pre-service Teacher which will in turn be passed to VTE students during teaching and learning.

Vocational and Technical Education Teachers Training Programmes in Nigeria

Training is defined as a process whereby a person or animal is changed to the desired degree of proficiency in some activities. Training is the process of imparting specific skills which will equip the individual or group of people to perform specific jobs effectively, efficiently and diligently for effective and efficient training programmes. Training consists of imparting not only cognitive skills and dexterity but also in developing the requisite values, attitudes and behaviours.

VTE teachers training programmmes was setup to train competence teachers who will be capable to impact the knowledge of VTE to the learners in various fields, such as Agriculture Science, Home Economic, Business Education, Auto- Mechanic, Electrical and Electronics, Metal Work, Wood Work, Building, Computer Education and others. VTE teachers are trained in various higher institution of learning such as Colleges of Education (Technical), some Polytechnics, Colleges of Education and Universities that runs VTE teacher training programmes.

The introduction of 6-3-3-4 system of education and the subsequent emphasis on VTE gave birth to the establishment of Federal College of Education (Technical) in Nigeria. These institutions are under the auspices of National Commission for Colleges of Education (NCCE). The objectives of NCCE and consequently the objectives of FCE (T) are geared towards the production of qualified technical teachers and practitioners of technology capable of teaching Introductory Technology, Business Education, Home Economic and others in Junior Secondary Schools (JSS) and technical colleges as well as inculcating scientific, technological, attitudes and values in the society. In other to have sufficient number of graduates of this programmes some polytechnics offer NCE Programmes in their institutions. The pattern and the curriculum of this programme is the same with what is obtained in Colleges of Education. Some Universities have the department of VTE with desire to produce quality VTE teacher competent in psychomotor, cognitive and affective skills (Ogwo and Oranu, 2006).

e- Learning Techniques

Rieber, & Welliver, (1989) defined e- learning as "web-delivered and/or web-supported teaching and learning using computer, multimedia, and internet technologies." e-learning is a means of education that incorporates self-motivation, communication, efficiency, and technology. e-learning is also called Web-based learning, online learning, distributed learning, computer-assisted instruction, or Internet-based learning. e-learning instructional techniques encompass all the instructional approach involving the use of electronic medium for instruction. This will includes Computer assisted instruction (CAI) and web/online/mobile and also learning through radio, tapes, video tape, internet and television. e-learning literally means electronic learning. The use of e-learning in instruction adopts in its main the principles of artificial intelligence. e-learning in the delivery blend enables teachers to cater to a wide range of learning styles such as auditory learning, visual learning and self-testing through puzzles and quizzes, and kinetic learning through workplace simulations (Ogwo and Oranu,2006).

Technology is developed to solve problems associated with human need in more productive ways. If there is no problem to solve, the technology is not developed and/or not adopted. Applying this

principle to educational technology would mean that educators should create and adopt technologies that address educational problems, of which there are many. Further, a technology will not be adopted by educators where there is no perceived need or productivity gain. This is what Lankshear and Snyder (2000) refer to as the 'workability' principle, therefore when discussing applications of computer technology to education the question must always be asked, "What educational problem(s) needs to be addressed?" This question needs to be asked at all levels of decision-making, from the teacher planning a programme, to a school administrator purchasing hardware and software, to an educational system officer developing policy and strategic plans.

Researchers have found that typically the use of ICT leads to more cooperation among learners within and beyond school and a more interactive relationship between students and teachers (Rieber, & Welliver, 1989). Collaboration is a philosophy of interaction and personal lifestyle where individuals are responsible for their actions, including learning and respect the abilities and contributions of their peers. Cooperation is a structure of interaction designed to facilitate the accomplishment of a specific end product or goal through people working together in groups. Studies have found that ICT provides good support for team-based project work. The use of ICT to support collaborative and cooperative learning is extrapolated to the support of a learning community (Riel, 1998).

e-learning is beneficial to education, corporations and to all types of learners. It is affordable, saves time, and produces measurable results. e-learning is more cost effective than traditional learning because less time and money is spent traveling. Since e-learning can be done in any geographic location and there are no travel expenses, this type of learning is much less costly than doing learning at a traditional institute. Flexibility is a major benefit of e-learning. e-learning has the advantage of taking class anytime anywhere. Education is available when and where it is needed. e-learning can be done at the office, at home, on the road, 24 hours a day, and seven days a week. . e-learning also has measurable assessments which can be created so the both the instructors and students will know what the students have learned, when they've completed courses, and how they have performed (Hannafin, & Savenye, 1993).

Students like e-learning because it accommodates different types of learning styles, such as cooperative learning, experiential learning, reflective learning and responsible learning. Students have the advantage of learning student center. Students can also learn through a variety of activities that apply to many different learning styles learners have. Learners can fit e-learning into their busy schedule. If they hold a job, they can still be working with e-learning. If the learner needs learn at night, then this option is available. Learners can sit in their home and learn if they desire (Hussein, 1996).

Employability skill Needs of VTE Teachers for National Security

Employability skills are defined as skills required not only to gain employment, but also to progress within an enterprise so as to achieve one's potential and contribute successfully to enterprise strategic directions. Employability skill is a non-technical ability and is part of the work skills which is as important as technical skill and should be acquired by everybody in the industrial field. Industrial employer agrees that generic skill is important to be acquired by their employees to be outstanding in their field (Hager, & Holland 2006). They also found that through his research that, technical graduates has mastered their technical skill but employers feel dissatisfied of their employees because they lack motivational skills, communication skills, interpersonal skills, critical thinking, problem solving and entrepreneurship skill. These are part of the generic skills. Hawkridge, (2005) in his study found that technical graduates cannot fulfill the needs and requirements of employer because the technical curriculum used was designed to prepare the graduates with basic knowledge and theory of technical aspects but lacking in practical.

A study conducted by Okebukola (2005) revealed the weakness that education graduates exhibit after graduation. A listing of these weaknesses includes: (1) Inadequate exposure to teaching practice. (2) Poor classroom management and control. (3) Shallow subject – matter knowledge. (4) Poor computer skills. (5) Inability to communicate effectively in English. (6) Lack of professionalism (Launching pad to greener pastures). (7) Lack of self – reliant and entrepreneurial skills. (8) Poor attitude to work.

Employability skills are generic but enabling skills, which are competencies allowing an individual to do things right and play a significant part in a working environment. Due to the impact of globalization, knowledge economy, industry upgrade, and rapid change in workforces, college graduates today need to possess the employability skills so that they can meet today's complex workplace demands; and they should be able to demonstrate these skills prior to their graduation.

The Employability Skills Framework specifies eight skill groupings to describe and define employability skills. The eight skill groupings are:

1. Communication skills: to convey and receive messages and information clearly and unambiguously without causing misunderstanding, and to contribute to

productive and harmonious relations between employees and customers;

2. Team work skills to work with diverse people cooperatively as a team in order to resolve problems and accomplish the set goals and to contribute to productive working relationships and outcomes;
3. Problem-solving skills to think reflectively and find answers to solve problems in real cross-disciplinary situations and to contribute to productive outcomes;
4. Initiative and enterprise skills to be creative and generate innovative solutions to make contribution to the workplace and be able to translate ideas into action and that contribute to innovative outcomes;
5. Planning and organizing skill to well manage time and priorities; to take initiative and make decisions; to collect, analyze, and evaluate information skills that contribute to long-term and short-term strategic planning;
6. Self-management skills To be able to evaluate and monitor own performance, take responsibility, and express own ideas and vision and to well manage time and priorities; to take initiative and make decisions; to collect, analyze, and evaluate information that contribute to employee satisfaction and growth;
7. Learning skills to be able to open to new ideas and change, learn via a range of mediums and apply learning to technical issues and operations and to contribute to ongoing improvement and expansion in employee and company operations and outcomes; and
8. Technology skills to possess IT skills, operate equipment, and apply IT as a management tool that contribute to effective execution of tasks.

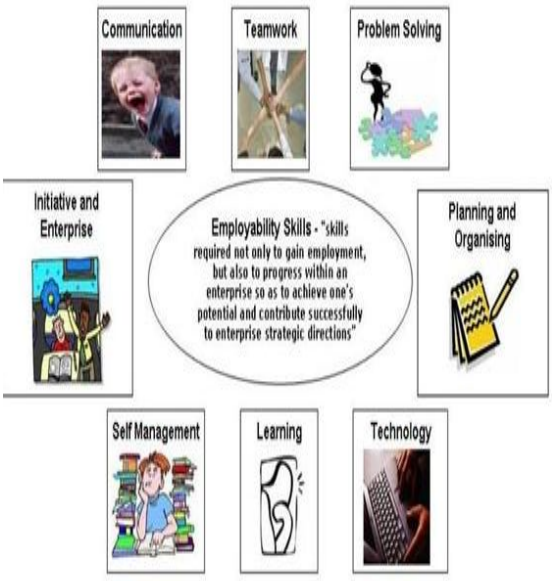

Figure1. Employability Skills. Source: Australian Flexible Learning Framework (2009)

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Examples of useful technologies for the development of the employability skills

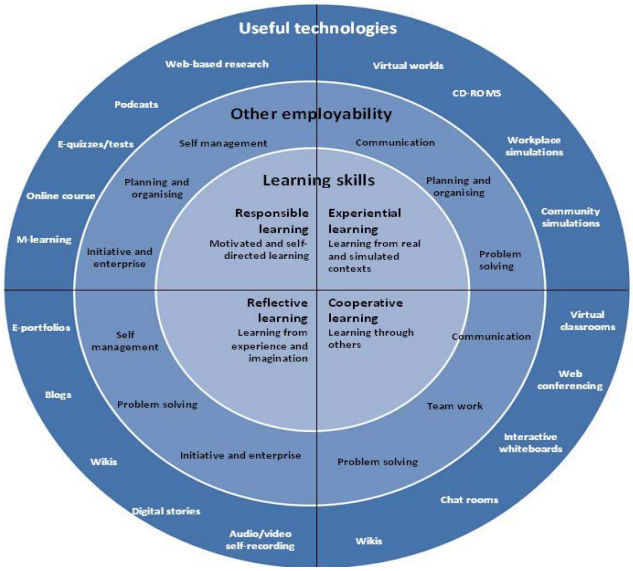

Figure 2. Technologies Development of Employability Skills Source: Hager, & Holland (2006)

The diagram above shows three elipse enbeded on each other, which portrate the impact of e-learning through useful technology. It consist of useful technologies such web conferencing, chat rooms, podcasts, e-quizzes/tests, wikis, audio/video self-recording and others. Employability skills such as communication, self management, team work, initiative and enterprise and others, can be developed in the part of learner. Another significant knowledge it contribute has to do with learning skills such as experiential learning, cooperative learning, reflective learning and responsible learning. This type of learning is central to education.

Cooperative learning is the learning in which the learners help one another. Those who have more knowledge, experience and competency, will help others. By this exchange of resources the learners develop a plane of social system in learning. As there are no high and low ones according to status among the learners they can ask the fellow students for helps without any hesitation. It should be on the basis of actual needs. So even while encouraging this exchange of ideas among the members of the group cautions acceptance is to be observed as a convention. There should be an understanding that satisfactory responses should come from each member and that the achievement of the group will be assessed on the basis of the achievement of all the members (Felder, and Brent, 1994).

Experiential learning is based on the notion that ideas are not fixed or unchangeable elements of thought but are formed and re-formed through 'experience'. It is also a continuous process, often represented as cyclical, and being based on experience, implies that we all bring to learning situations our own ideas and beliefs at different levels of elaboration. Kolb and Boyatis (2001) provide major insights into experiential learning which they describe as the process whereby knowledge is created through the transformation of experience. They proposed that experiential learning follows a cyclical process – from experience to reflection to conceptualization to application, with this cycle being continuously repeated.

Responsible learning which emphasizes self management and initiative and enterprise as learners work independently to develop new knowledge and activities in the interest of furthering their skills.

Reflective learning which is about consciously and systematically appraising experience to turn it into lessons for the future. This can be introspective, where learners are encouraged to examine changes in their own perceptions, goals, confidences and motivations. It addresses developing critical thinking skills, learning to learn and developing attitudes that promote lifelong learning. Reflective learning can be useful in directly addressing problem solving, initiative and enterprise and self-management skills.

A successful trained e-learner has not only learned course knowledge, but also demonstrated the core skills being built. The following table shows close connection between employability skills and e-learning competencies (Australian Flexible Learning Framework, 2009).

Table 1: Link Between Employability Skills and e-learning

S/No	**Employability Skills**	**E-learning Competencies**
1	Communication	To be able to share opinions clearly and unambiguously with teachers, teammates or classmates via Internet, email and discussion forums, blog, or SKYPE.
2	Teamwork	To be able to work with diverse classmates or teammates cooperatively as a team for online tasks in order resolve problems and accomplish the learning objectives; for example, conducting a case study in a real world situation
3	Problem solving	To be able to think critically and find solutions through job-realistic scenario-based e-learning (SBeL), which is highly interactive and requires problem-based skills.
4	Initiative and enterprise	To be able to produce original workable solutions for a job specific problem and explain reasons for action taken in a cooperative virtual environment.
5	Planning and organizing	To be able to take initiative and make decisions to allocate available resources online; and to be capable to search, analyze, evaluate, and organize information collected online; and most important, to respect for intellectual property rights.
6	Self-management	To be time-managed, self-motivated, self-determined, self-disciplined, and to take responsibility to evaluate own performance online.
7	Learning	To be able to know what to learn and how to learn, be appreciated new ideas and accept learning through different mediums including networking and information technology; and be able to develop life-long learning competencies.
8	Technology	To possess basic computer literacy to work efficiently on web-based e-learning and to have information literacy to handle information necessary for effective online learning.

CONCLUSION

Insecurity in any nation is caused by high unemployment rate among graduates and many of graduates that are not employable. The development of employability skills in teaching and learning plays important role in Vocational and Technical Education. e-learning is one form of learning using constructivist epistemology, where the learner can engage in independent learning process (computer mediated learning) and the guided (computer assisted learning) and develop employability. Employability skills are required not only to gain employment, but also to progress within an enterprise so as to achieve one's potential and contribute successfully to enterprise strategic directions. Therefore e-learning plays significant role in impacting employable skills on pre – service students thereby making them to be employable or self employed and live peacefully in the nation.

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