STRATEGIES FOR INTEGRATING ICT IN ENTREPRENEURIAL EDUCATION IN TERTIARY INSTITUTIONS

Mfon Asuquo Offiong  
fonymeks2015@yahoo.com  
Department of Vocational Education  
University of Uyo, Uyo

Emmanuel Ezekiel Caleb  
Department of Vocational Education  
University of Uyo, Uyo

Abigail Aniefiok Effiong  
Department of Curriculum & Teaching  
University of Calabar

Abstract
Tertiary institution is committed to the appropriate, effective and sustainable use of information communication technology (ICT) to broaden access and improve the quality and efficiency of learning and teaching. ICT framework is designed to enhance, strengthen and transform learning to develop the Nigerian learners into persons who are excellence-driven, global in perspective, innovative and creative. The paper viewed the concepts of ICT as crucial to the advancement of entrepreneurial education at the tertiary level. This paper also highlighted the importance of integrating ICT in entrepreneurial education in tertiary institutions. It further examined the challenges to be addressed for effective implementation of ICTs in entrepreneurial education. Recommendations were equally suggested which included that government should ensure the creation of a conducive learning environment with ICT infrastructure to aid entrepreneurial education; higher institutions should reform their curriculum to include entrepreneurial education as professional course.

KEYWORDS: Information, Communication, Technology, Entrepreneur, Education.

Introduction
Entrepreneurship is a key driver of any economy. Wealth and a high majority of jobs are created by small businesses started by entrepreneurially minded individuals, many of whom go on to create big businesses. People exposed to entrepreneurship frequently express that they have more opportunity to exercise creative freedoms, higher self-esteem and an overall greater sense of control over their lives. Entrepreneurship education seeks to provide students with the knowledge, skill and motivation to encourage entrepreneurial success in a variety of settings. Entrepreneurship is developed as a way of developing skills such as risk-taking and a problem solving that facilitate the achievement of life goals and in education. Entrepreneurship is the recognition of an opportunity to create value, and the process of acting on this opportunity. It involves the formation of a new entity (FaCs, 2003). However, this view of entrepreneurship has been preceded by certain basic understandings of what entrepreneurs do. For instance,
Cantillon (1997) saw an entrepreneur as a self-employed person with tolerance for risk inherent in providing for one’s economic well-being.

In recent times, the role of the entrepreneur has been expanded with the advent and prevalence of Information Communication Technology (ICT). It has introduced a new paradigm for the configuration of economic activities by radically changing the approach to technology for development (UNCTAD, 2007). ICT gadgets such as the telephone, analog and digital computer connected to internet, the television, radio, social networking applications, World Wide Web (w.w.w.) and all other emerging technologies has made it possible to communicate more conveniently across borders. Its transformatory role has changed the notion of “entrepreneurship” from a time and space limited entity to a more pervasive concept involving the use of and modification of intangibles such as ideas and experiences in the creation of equally virtual and intangible enterprises.

ICT entrepreneurs are almost taking over from the traditional entrepreneurs. The evidence of integration of ICT in entrepreneur education can be seen from the successful entrepreneurs at Western countries like United States. The successful ICT entrepreneur in the United States can be traceable to Google.com, Yahoo.com, Gmail.com, Amazon.com and eBay.com. Eduardo (2006) argued that google.com is one of the successful stories of young entrepreneurs who use ICT knowledge. Eduardo also posited that the diffusion and adoption of ICT in entrepreneur education can be regarded as relatively more mature and developed.

Despite the growing awareness and huge potentials of ICT in entrepreneur education, only very few are embracing and exploiting its benefits. Thus, the objective of this paper is to examine the strategies for integrating Information Communication Technology in entrepreneurial education in tertiary institutions.

**Concept of Entrepreneurial Education**

Entrepreneurship from a general point of view can be defined as response to the diverse opportunities and potentials that exist within an individual and the environment. The concept refers to a creative and innovative response in economic and social ventures. It involves setting up of business ventures through willingness and ability of an individual to explore investment opportunities and being able to run them successfully, through making them profitable or suffering loss of invested capital. It involves combining resources to increase value and introducing change and innovation into the production process and creating wealth and employment opportunities. Education is a veritable tool for achieving the goals of the society. According to the World Bank (1999), education is fundamental to the construction of knowledge economy and society in all nations. It is through education that knowledge and skills are transferred to individuals,
and their competencies and abilities developed. However, entrepreneurial education has been given prominence all over the world. Through entrepreneurial education, learners are provided with knowledge, skills and innovation so as to encourage them to develop entrepreneurial acumen in a variety of settings (Wikipedia, 2015). Entrepreneurial education refers to programs that promote entrepreneurship awareness for career purposes and provide skills training for business creation and development (Vester, 1990). Entrepreneurial education can prepare for new venture initiation by transferring knowledge and developing relevant skills that improve the self-efficacy and effectiveness of the potential entrepreneur. Entrepreneurial education encourages students to think innovatively around future careers or employment options, as well as how they can contribute directly to the community. Such programmes are helping to reduce learners’ vulnerability, social marginality and poverty, especially in distressed or disadvantaged communities. Entrepreneurial education inspires learners to do all the rights things, understand the relevance of a good education, gain financial literacy, plan for financial independence, explore their talents and most importantly, stay in school and develop pathways to college.

Relevance of ICT in Entrepreneurial Education

The improvement of the educational system over the years has been the concern of educators and researchers, in both the sciences and in the humanities. This yearning is not unconnected with the undisputable fact that National Development is hinged on the successful development, use and execution of research findings in the application of ICT tools in teaching and learning. For the purpose of this presentation, ICT is defined as the integration and utilization of the innovation of computer technology for the purpose of organizing, encoding, packaging and dissemination of information and skill acquisition to target destination or consumer without the constraint of time and space (Okoye, 2005). This is to say that an ICT-based instructional system operates a continuous lifelong training process. This definition, no doubt, implies more freedom for the teachers and more opportunity to use initiatives for the learners. The time gained by teachers will necessarily be employed for better scientific planning of instructional content and delivery strategies. The overall effectiveness of an ICT driven instructional system is relatively high. The multiplier benefit of a networked instructional system ensures a future of educational excellence, expansion and efficiency at reduced cost. ICT removes age, distance and time constraints in any learning process and ensures immediate provision of knowledge in relevant areas with the ease and speed that could never be got from traditional learning system. In addition, the information comes in the proper structure that allows the receiver to use it with minimum efforts.
Learners’ Engagement in Information Communication Technology

Because of their growing confidence and levels of expertise with the technology, the learners will seem to take ownership of the management of ICT based instruction in the classroom, and this is an evidence of ICT contribution to independent learning and the enhancement of enthusiasm for entrepreneur education. Independent learning is generally used in schools to mean that learners are able to find out specific information or perform particular tasks without the teacher having to present it. However, being a competent life-long learner also encapsulates the skill of knowing what kinds of questions are appropriate and important to rise in order to engage meaningfully with information on a subject. This may be part of the model of independent learning applied within entrepreneurial education based mainly on content and skill acquisition.

ICT in the Pedagogical Preparation

a) **Active learning:** ICT enhanced learning by providing a platform for student inquiry, analysis and construction of new information. Learners therefore learn as they do and, whenever appropriate, work on real-life problems in-depth, making learning less abstract and more relevant to the learner’s life situation.

b) **Online collaborative learning:** ICT-supported learning encourages interaction and cooperation among students, teachers, and experts regardless of where they are. Apart from modelling real-world interactions, ICT-supported learning provides learners the opportunity to work with people from different cultures, thereby helping to enhance collaboration and communicative skills as well as their global awareness. It models learning done throughout the learner’s lifetime by expanding the learning space to include not just peers but also monitors and experts from different fields. Online discussions can be used to foster critical thinking.

c) **Information and Communication Technology** has the potential to widen access to educational resources, improve the quality of learning and improve management efficiencies of educational system. ICT use in entrepreneurial education is not all about ICT literacy but it also involves the building of high-order skills, i.e. knowing and understanding what it means to live in a digitized and networked society and use digital technology in everyday life.

d) **Facilitating the acquisition of basic skills:** The transmission of basic skills and concepts that are the foundation of higher order thinking skills and creativity can be facilitated by ICTs through drill and practice (Fred, 2015).
The Strategies of Integrating ICTs in Entrepreneur Education

The areas of ICT entrepreneur development are the business centres, graphics centres, music studios, the internet centres, computer training centres, computer technicians, web designers, internet employment agency service, internet advertisements, internet tourist, videography, decorations, photographic and cinematography, agriculture (poultry and aquaculture). The business centres provide services for communication of information to customers. The services provided by the business centres changes to include more interesting services which are required by the service unit. The graphics centres are also another area where entrepreneurs using ICT tools like computers, scanners, internet and other accessories to design graphics.

The internet centres is another area ICT tools can be utilized, these centres provide internet services for people with a minimal cost. The services provided improve the people standard of living and also employ hundreds of individuals directly or indirectly by the entrepreneurs.

Skills development is the intended output of education and training efforts and it is an enabler for growth. As an entrepreneur, the growth in business and the establishment of a legacy are paramount. Development of skills enhances the capability of employees to improve the company’s efficiencies in the employee’s specific sphere of influence, and thus ultimately improving the bottom line revenue of the company. Employee individual capability development skill is fundamental to the success of the entrepreneurial education. Skills development therefore can be defined as what one does to improve productivity in the workplace and the competitiveness of business and to improve the quality of life of workers, their prospects at work and their mobility.

Studies by Praag, Teskz and Peterson (2000) revealed that successful entrepreneur education depends on integrating ICT infrastructure, technical skills and user time. Therefore, organisations with higher levels of technological capability show the likelihood to innovate. Technology relates to ICT infrastructures, internet skills and e-commerce know-how. ICT infrastructure provides a platform upon which e-commerce is built. Internet skills offer the technical know-how needed to develop entrepreneurial applications (Migisha, 2011). By implications, technology capability goes beyond physical assets to include intangible resources which perhaps generate competitive advantages for entrepreneurs. Entrepreneurial skills development and team-based entrepreneurial activities are the primary determinants of ICT entrepreneurial education in an institution. However, experimental activities in terms of testing and prototyping, videography, agriculture, photography and cinematography, access to resources, coaching and experience sharing is a key constructs that determine ICT integration and the success of entrepreneurial education, in tertiary institutions.
Entrepreneurial skills defined the intended output of education and training efforts using ICT applications which will increase job related productivity, effectiveness and performance within the institution (Larry and Best, 2011). Entrepreneurial skills development is one of the determinants of ICT integration and can provide diagnostic insights on new innovation. Entrepreneurial skills development has direct effects on innovation in terms of number of innovation transferred, total funds, invested in innovation projects and improved time to market for new innovations. The development of entrepreneurial skills paves way for small business innovation. Ballam and Festus (2007) did a similar work in explaining the construct of entrepreneurial skills development into employee’s specific sphere of influence which helps in improving the bottom line revenue of the company, thus provides more specific insights into understanding development of entrepreneurial skills. Yi, Audrey and Santos (2006) further expanded entrepreneurial skills development by the use of internet technology in the development process and proposed that internet technology is positively related to development in entrepreneurial skills.

Challenges to Implementing Entrepreneurship Education in Nigeria

In most Nigeria institutions, learners do not have access to entrepreneurship training; materials, teachers and equipment, the learning environment and support tools are not available in our schools. Qualified lecturers to provide the needed skills and attitudes are not available. The entrepreneur programmes are included in the school curricular as GSS courses not as a professional course. The current educational system although to some extent teaches entrepreneurial education, does not promote consistent entrepreneurship development in any sense. Lecturers have the potentials for enhancing the quality of education by bringing life to curriculum and inspiring students to curiosity and self-directed learning. A comprehensive entrepreneurial education in all discipline should be introduced so that all disciplines can learn how to make money on their own without seeking for jobs.

School Curriculum Reform

Entrepreneurial education should be made compulsory in schools at all levels (primary, secondary and tertiary). This will inculcate in students from an early age, the qualities required of them to take up positions of responsibility. Schools, especially universities should provide their students with the fundamental tools to succeed academically and in future life. It is high time more attention is paid to the problem of mismatch between teaching in our educational institutions and the needs of the labour market which usually create unemployment among the youths. Thus, school curriculum should be updated and restructured to meet the demands of the economy. New curricular and teaching methods should be introduced that will engage the students and build a
closer connection between school and work. The curriculum should be taught by teachers who engage their students in the discovery and development of their entrepreneur talents. The curriculum should be certified to meet national testing standards, rich in content and well organized. Moreover, more opportunities should be given to students to acquire practical experience in the use of machinery, equipment and tools in their chosen career. More qualified teachers should be available to teach vocational, innovative entrepreneurship and job skills.

Improving Technical and Vocational Education

The government should refocus its attention on technical and vocational education as a sustainable means for improving entrepreneur and self-employment. This should be in term of improved facilities and making the curriculum to reflect the current needs. The curriculum should promote a culture of enterprise and entrepreneur as a viable career option, inspire and equip learner in the local community to learn and succeed through enterprise, stimulate entrepreneurship thinking amongst learners, enhance leadership skills and increase community awareness as well as enhance the educational experience of future leaders. If these are accomplished it will reduce the apathy towards technical education by youths and thus initiate youths into the culture of self-reliance.

Role of Government

Government should facilitate entrepreneurial education in a non-interventionist way. A smooth running market economy is the best way to encourage entrepreneur, rather than direct support. Government should provide business friendly infrastructure by providing a framework of enforceable competition law that will discourage monopolies and unfair competition as well as by intellectual property rights that protect a firm’s valuable but often intangible, knowledge assets. Government policies and other national business environment factors could be marshaled to influence the rates and types of entrepreneurship. Government should create an enabling environment that reduces the barriers to market entry. This can be possible by integrating entrepreneurship into the country’s economic development efforts. They should also invest in diverse sources of risk capital to fund entrepreneurs.

The Role of Higher Institutions

Higher institutions should partner with government in developing the required strategy for fostering entrepreneurs both at the individual and the firm level. They can originate the content and set the tone for developing the policy and institutional framework for entrepreneurship. They should promote entrepreneurship among other disciplines besides since and engineering. They are to raise awareness by teaching and nurturing students about entrepreneurs and their individual experiences, equip students
with necessary skills and knowledge to start a successful business. Higher institutions should also promote innovation by supporting academic and research activities wherein business and institutions of learning can partner to nurture innovation and entrepreneurship.

**Information and Communication Technology (ICT)**

Technology resources have the capability of enhancing quality of life and economic performance. When learners do not have the knowledge or skills to use the latest technology as digital natives, it affects their outlook in life. The internet and other Information Communications Technology infrastructure are not available in most Nigerian institutions. This situation denies them an alternative means of skill acquisition, information access and other advantages. The government should be aggressive in providing ICT education at all levels of education. There should be adequate funding of education: every school teacher must be computer literate; ICT education should be integrated into the curricula of all levels of education and implementation. Through this, the learner will be ICT literate and will be integrated into the global village and explore the various opportunities offered by ICT.

**Creation of State Entrepreneurship Education Innovation Fund**

Creativity and innovation on the part of educators and other partners are vital way of growth and development. The state governments should create small pools of funding to help institutions stimulate such innovation. These funds could be managed by a state advocate or by a state department of education. The fund would provide small seeds grants to support development of new Entrepreneurial Education model that would help advance the field.

**Recommendations**

Considering the pivotal role of ICT in entrepreneur education in tertiary institution, the following recommendations are made:

1. Government in all levels should consider automating all of their offices, which will require ICT personnel, thereby develop manpower in ICT.
2. Entrepreneurship tendencies among young Technical Vocational Education and Training (TVET) graduates can be enhanced through the provision of ICT training and skills acquisition.
3. A special ICT intervention fund should be created and managed by the federal government geared towards the support for research and development in ICT to promote entrepreneurship.
4. Provision should be made for ICT compliance classrooms by government in public schools across Nigeria.
5. Higher institutions such as polytechnics and universities should reform their curriculum to inculcate entrepreneurship not just as a course, but as an objective.

**Conclusion**

It is a truism that the integration of ICT in entrepreneurial education will enable the university learners to emerge at the forefront of economic development. To this vision, tertiary institutions are committed to the appropriate, effective and sustainable use of ICT to broaden, access, and to improve the quality and efficiency of education service delivery.
References


