

THE GAP BETWEEN TEACHING AND RESEARCH IN TECHNICAL EDUCATION IN NIGERIA

Dr Nsikan Okon James
Department of Elect / Elect Engineering,
Maritime Academy of Nigeria,
Oron,
Akwa Ibom State.

Dr Batchman E. Isaac
Department of Vocational Education,
University Of Uyo,
Uyo.

Dr Emmanuel B. Joseph
Department of Vocational Education,
University Of Uyo,
Uyo.

Abstract

Technical Education can be seen as that aspect of education that involves acquisition of professional skills, special manipulative skills, creative minds and attitude required to practice a profession for the benefit of an individual and the society. It also connotes education with salable and employable skills which can lead to self-reliance, self-employment thus generate per capital income in a society like Nigeria with abundant human resources. However, technical education development in Nigeria is influenced by missing gap between teaching and research. This paper examined the problems associated with the gap between teaching and research in technical education which include poor funding of research programmes in technical education, non implementation of research findings and recommendations in the teaching of technical education, inadequate training and re-training of technical teachers, poorly equip laboratories, defective curricula, weak industry partnership, and poor teaching techniques. However the paper recommended that the present curriculum of technical education should incorporate research related issues so as to bridge the existing gap between what is taught in classroom, research work in workshop and after graduation.

Keywords: The Gap between Research, Teaching, Technical Education Nigeria.

Technical Education is that aspect of education that has to do with acquisition of skills and knowledge. Ogundele (2010) defines technical education as education which involves special

manipulative skills, creative minds and attitude required to practice a profession for the benefit of that individual and the society. Technical Education is also the training of technically oriented personnel who are to be the initiators, facilitators and implementers of technological development of a nation by adequately training its citizenry on the need to be technologically literate leading to self-reliance and sustainability. Technical Education can serve as change agents not only for technical systems but also for many other aspect of the society. The practical aspect of Technical Education makes it unique in teaching content and research approach. Technologists are supposed to solve societal problems in sustainable ways. For them to do so they need to be sufficiently informed in technical education concepts and the application of its theoretical principles to practical solutions via teaching and research.

According to Hogan (2012) the objectives of technical education include gainful employment sequel to training, skilled craftsmanship, creative tendencies and problem solving ability. From its inception, technical education has been interpreted as education for survival, but technical education is more than education for survival. It is a very comprehensive form of education characterized by responsiveness to emerging technologies which have become the order of the day.

The Role of Functional Technical Education in Nation Building

Functional Technical Education has been viewed as a potent instrument of change for any nation. It is the main engine for the development of any nation, development of middle manpower resource for the day to day economic and industrial growth and development. It also involves the process of bringing up craft-men, technicians, technologists and engineers to develop their potential skills to the fullest so that they can contribute meaningfully and maximally to the development of the nation (Fuandai, Shiaki & Gbari, 2007). This type of education lead to the realization of the potentials of an individual as well as maximizing his contribution towards the development of his community, promote the welfare of citizen, advance technology, promote economic growth and enhance overall national development. This is done

through remarkable reduction in crime rate such as robbery, unemployment, kidnapping, militancy as well as alleviation in the poverty rate in the nation. Usoro (2008) observed that Technical training is needed as one of the best tools that can be used in this era to curb rising wave of social vices and unemployment. Technical Education is therefore considered as the major instrument in pursuing national development. The roles are as follows:

- **Produce Skilled Manpower:** It produce individuals with professional skill to avoid the death of skilled workers needed to satisfy the country's developmental needs. It promotes the production of skilled technical and professional manpower for the revitalization and sustenance of the national economy. (Nwankwo, 2013; Ogunkayode, 2012).
- **Reduce High Rate of Unemployment:** Technical Education involves the acquisition of techniques and application of knowledge for the benefit of an individual and his society. An individual could be self –employed instead of waiting to be employed. Thus employable skills are easily acquired through functional technical education. (Nwankwo 2013).
- **Promotes Creativity and Innovation:** Technical Education possess the economic strength for technological development and national prosperity. Technology, creativity and innovation are the major products of technical education and are the leading factors of production in the emerging global economy.
- **Enhances Productivity and Self-Reliance:** Higher productivity gives a nation advantage of economies of scales and lowers the cost of production and prices of goods and services. Technical Education has a great impact on productivity and economic development for national

transformation. Today, the highest demand for national development is reliable and competent technicians and craftsmen to carry out productive activities in the manufacturing industry. This clearly indicates that the progress of any society lies in the productivity of its citizens. (Victor, 2009).

Challenges To Effective Research In and Teaching of Technical Education in Nigeria

Teaching can influence research by stimulating meaningful research question, challenging researchers thinking and reinvigorating the educator's mind set. Teaching inspired research through the scholarship of teaching since the basic purpose of research is to increase the stock of knowledge that can pass on to future generations. In technical education the gap exist when relevant research fails to reach practitioners and when relevant research is not undertaken by researchers due to the following challenges:

- (a) Non Availability of Research Materials to technical teachers to read and update teaching process and inadequate research on technical education field by researchers to enhanced scholarship of discovery.
- (b) **Lack Of Coordination Between Research Institutes And Production Enterprise:** Most of the discoveries and inventions were never implemented. This is mainly because production enterprises operated independently with little or no exchange of information. Wodi (2012) asserted that there was no clear goals for research and development and the importance of research and development for purely scientific purposes .
- (c) **Poorly Equipped Workshop:** The Nation's Technical Colleges, Monotechnics, Polytechnics and Universities that are supposed to train proficient technicians, technologists and engineers are now filled with outdated and in most cases non-functional equipment. Sofolohan (2008) contended that shortage of workshops and laboratories in technical institutions hinders the realization of the goals and objectives of Technical Education curriculum. Workshops in Technical institutions are yet to become-functional. They are not serving the purpose for which they were built. Technological development is therefore hindered by poor nature of the learning environment. Workshops and laboratories for Technical Education programmes should be of high quality since the objective and strength of the programme lie in providing intensive training in a wide variety of workshop situation. Survey of most technological colleges in Nigeria reveals that their workshops and laboratories are inadequate and therefore uncondusive for teaching and research for both teachers and students. Asele (2010) observed that gross inadequacy of workshops and classrooms for pedagogic activities, irregular power supply and non-provision of materials for students' psychomotor learning have contributed to low quality of instructions.
- (d) **Obsolete Curricula:** The major setback that is hindering effective Technical Education in Nigeria is the issue of curriculum development. Onwuka (2009) observed that the Technical Education curriculum in Nigerian institutions can be said to be obsolete and there is need to reshape Technical Education curriculum to accommodate the current needs of Nigeria technological development and close the existing gap between research and teaching of technical education.
- (e) **Students Lack of Exposure to Industrial Practice:** According to Olorunfemi and Ashaolu (2012), the major qualities of a good technologist are technical ability, imagination, good teaching method, industry partnership, quality research and solid judgment. They observed that technical abilities depends on technical knowledge. Sadly, technical institutions have not gained the cooperation of industries in the Students Industrial Work Experience Scheme (SIWES). Students

find it difficult to get position for industrial attachment for their practical experience and research needs in technical education.

Teaching and Research in Technical Education: The Gap and The Nexus

The existing gap between teaching and research in Technical Education in Nigeria is as a result of inherent challenges facing Technical Education programme which include poor funding of research programmes, non-implementation of research findings and recommendations in the Technical Education, inadequate training and re-training of technical teachers, defective curricula, poor Teaching technique and weak industry partnership. Teaching in this context may be defined as an interactive process, primarily involving classroom talk, which takes place between teacher and pupil and occurs during certain definable activities. Again, teaching is an intimate contact between a more mature personality and a less mature one which is designed to further the education of the latter or undertaking certain ethical task which induce learning. It is a task of a teacher which is performed for the development of an individual. Research is the process of creating new knowledge in order to solve existing problem. Making progress in creating knowledge requires a significant amount of background knowledge before one can reach the 'frontier' of a topic where the interesting questions are since it takes a significant amount of time to accumulate knowledge in an area. The process of building understanding in a particular area allows an individual to develop a deep understanding the paradigm and theories that currently exist, and how those paradigm and the existing based might be extended. Again, in the process of explaining an existing phenomenon, that existing explanation, technologies, or theories do not actually suffice. According to Feamster and Gray (2013) research breakthroughs often occurs when old paradigms are discarded or amended, thus changing ways of thinking about problem completely. Teaching encourages technologists to think about the long road, big picture and what really matter about a particular research contribution. Thus teaching and research offer solution to a problem. Purposeful research results to purposeful teaching, teaching and research are mutually exclusive, both help to develop insight into technical field. Research results instill fresh material in the classroom setup, investing efforts in teaching well can actually make a better researcher to create new knowledge. It is pertinent to master the existing body of knowledge.

There is gap in Technical Education curriculum. The practical, theoretical and research content of Technical Education are inadequate. They do not reflect the felt needs of the Nigerian nation. They are borrowed from Britain and United States of America (Susu, 2010). A reflective Nigerian society therefore means basing technical education teaching and research contents on Nigeria's cultural, social, economic, political and occupational survival needs. The nexus therefore is to have a curriculum content that will facilitate the identification of cognitive, affective and psycho-productive elements associated with balanced work behavior in research and teaching of technical education in Nigeria.

Conclusion

Technical Education development in research and teaching deals with the training of technical man power and personnel for the purposes of initiating, facilitating and implementing the technological development of a nation and also to create the basic awareness of technological literacy to youth for economic empowerment and rapid industrial transformation. But these cannot be achieved due to existing gap between research and teaching of technical courses. This imbalance between what is taught in classroom and the world of work could be bridged if the curriculum of technical education in respect to teaching and research should be innovated to reflect the technological needs of Nigerians. Also proper funding of research in technical education programmes, then technical education development in the country will be productive.

Recommendations

The following recommendations are made:

- The present curriculum of technical education should incorporate research related issues so as to bridge the existing gap between what is taught in classroom, research work in workshop and after graduation.
- The Federal Ministry of Education should provide adequate funding of technical education research programmes.
- The government should equip technical institutions with functional workshop and instructional facilities to enhance instructional delivery.

References.

- Asele, E. D. (2010) Retention and Utilization of Technical and Vocational Teachers as a way forward for effective skills acquisition. A paper presented at ITF 18th National Training Conference on Technical and Vocational skills acquisition: An imperative for Nigerian's economic development held at the National Centre for Women Development Garki, Abuja.
- Feamster, F. & Gray, A. (2013) The relationship between teaching and research. www.Greatresearch.org. Retrieved 02/09/2015
- Fuandai, C. M; Shiaki, B. & Gbari U. S. (2007) Functional education as a spring board for national development. *Multi-dimensional Journal of Research and Development* 5, (2): 147-150.
- Hogan, S. U (2012) Vocational -Technical Education: Extent of achievement of millennium Development Goals for sustainability, *Journal of Resourcefulness and Distinction*, 2, (1): 1-14.
- Nwankwo, N. (2013) Technical and Vocational Education: A key for employment. Online article, posted on April 17, [www. Nigeria pilot.com](http://www.Nigeria.pilot.com)
- Ogundele, A.G (2010) Higher Education and Employability in the international labour market. The need for Technical Education. A paper presented at the 1st International conference organized by collaboration of education facilitates in West Africa (CEFWA) from 8th - 11th February, 2010 at the University of Ilorin.
- Ogunkayode, O. (2012) Transformation agenda: The role of technical and vocational education. Federal Ministry of Information. Abuja. National Press Centre (NPC) Nigeria.
- Olorunfemi, A. I & Ashaolu, M. O. (2012) A pragmatic approach in Engineering Education teaching methods and industry partnership. www.sefi.be/wp.content/abstract/1261pdf.Retrieved04/03/15
- Onwuka, E. N. (2009) *Reshaping Engineering Education curriculum* to accommodate the current needs of Nigeria *Educational Research and Review* 4, (7): 334-339.
- Sofolohan , A. O. (2008) *Curriculum Implementation in Nigeria Education Today* 3, (1) pp 54- 57.
- Susu, A. A. (2010) Science and Technology: Basis for Accelerated National Development. *The Nigerian Educational Times* 28, 17-19.

- Usoro, S (2008) Technical Education and skill acquisition in the 21st century. *International Journal of Educational Development (IJED)*, 4, (1): 75-77.
- Victor, E. D. (2009) Technical and Vocational Education. A key to Nigeria's development on line article, posted on march 24th nigvillagesquare.com.
- Wodi, S. W. & Dokubo, A. (2012) Innovation and change in Technical and Vocational Education in Nigeria: Challenges for sustainable industrial development. *British journal of Arts and Social Science* 10, (1): 53 – 90.