The Technical Teacher, Teaching and Technology: Grappling with the Internationalization of Education in Nigeria

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ABSTRACT

This paper discussed the challenges faced by the technical teacher in the light of heightened societal expectations. The identity and functions of the technical teacher is changing with respect to new trade areas and skills occasioned by new technologists, objectives of education, new policy thrust tilting towards entrepreneurship as well as the issues of internalization of education. These issues are discussed in details using relevant subheadings. It is concluded that the technical teacher, then, needs to be knowledgeable himself, improving on his skills, knowledge and experience for him to be able to impart new and relevant skills to the students. Until the education of the teacher is taken as paramount as that of the student, no student will ever be better than his/her teacher. It was recommended amongst others that the ministry of education should engage in periodic training of technical teachers on new trends in their chosen fields, to improve their knowledge of their chosen professions and the ministry of education should consider credit transfer system for the west African sub region, where a student can start a technical course in Nigeria and finish in any other participating country in west Africa.
Keywords : Education; Quality of teaching; Technical Teacher; Technology; Globalization

I. INTRODUCTION

The question of what knowledge, attitudes, behaviours and skills teachers should possess has been a longstanding issue of debate. This is simply because teachers are saddled with the responsibility of developing students through the provision of information, advice, wisdom and facilitating learners' acquisition of the key knowledge, attitudes and behaviours that they will need to be active participants in society. However, with heightened societal expectations from education and the challenge of internalization of education, upon the dynamic role of technology in shaping educational outcomes, the identity and functions of the Technical teacher as well as the environment in which they function, needs to be reviewed. Nonetheless, such reviews can only be effective only when an appraisal of current trends in the technical teaching profession is carried out. This study explores the roles of technical teachers; Issues in teaching technology education/industrial programmes as well as the challenges of internalization of education with respect to the Nigerian context.

II. METHODS AND MATERIAL

A. The Changing Roles of the Technical Teacher

The technical teacher is an essential factor in the delivery of instruction to students, regardless of the mode of instruction. A teacher has professional knowledge and skills gained through formal preparation and experience. Teachers provide personal, caring service to students by diagnosing their needs and by planning, selecting and using methods and evaluation procedures designed to promote learning. The educational interests of students are best served by teachers who practice under conditions that enable them to exercise professional judgment.

Teachers have been portrayed in a number of ways in media, more often than not, with detrimental images and some, they take the face of the hero of societies, as the one who masters his/her craft and helps students excel. The effective teacher can be seen, heard and sensed. Teachers are the front-line service providers in education. Good teachers do more than teach curriculum content: they inspire and enthuse their pupils while also serving as role models, in terms of attitudes and social relationships as they model behaviours. The role of technical teachers is to promote the acquisition of technical skills as well as scientific knowledge that will help the students develop employability skills as well as become participative and responsible citizens.

Mahmood (2013) observed that teachers performance consists of teachers academic qualification, quality of teacher training, teaching experiences, pedagogical practices, professional development, mentoring, coaching, subject knowledge, dedication, commitment level and classroom management abilities. The demands made on teachers, school leaders, and teacher educators are increasing and changing. They are called on to play a key role in modernising education. The challenges facing vocational education and technical training systems in developing countries and transition economies like Nigeria and indeed, Africa are immense. They must equip learners with new skills and competencies and educational institutions must do all of this for more learners with different backgrounds, experiences, levels of motivation and preferences.

According to Harden and Crosby(2000), implicit in the widely accepted and far reaching changes in education is the changing role for the teacher. twelve roles for the teacher have been identified in this regard and these can be grouped into six areas in the model presented; The Information Provider; the role model on the job and in more formal teaching settings; the facilitator as a mentor and learning facilitator; the student assessor and curriculum evaluator; the curriculum and course planner; the resource material creator and study guide producer. The teacher is the yardstick that measures all the achievements and aspirations of the society. The worth and potentials of country get evaluated in and through the work of the teacher. The people of a country are enlarged versions of their teacher and they are the real nation builders. There should therefore be adequate quality provision for effective learning to occur. This requires taking measures to including increase in teacher employment and improvement in the quality and status of the teaching force.

A key element of education in Nigeria is the Technical Education, aimed at developing manpower for the nation's economy. This is done through occupational training in specific trades by mostly Technical colleges and Polytechnics across Nigeria. Education for employability and self-reliance has been gaining momentum amongst policy makers and the policy thrust in recent times has been towards entrepreneurship education through vocational and technical education training. The burden of transformation rests on the training institutions and the teachers, to turn policies into practice, implement educational reforms while also bringing learning closer to the students of today, by introducing technology and student centred approaches to instruction.

B. The Technical Teacher and the Quality of Teaching in the Knowledge Economy

In its broadest sense, teaching is a process that facilitates learning. Teaching is the specialized application of knowledge, skills and attributes designed to provide unique service to meet the educational needs of the individual and of society. The choice of learning activities whereby the goals of education are realized in the school is the responsibility of the teaching profession. In addition to providing students with learning opportunities to meet curriculum outcomes, teaching emphasizes the development of values and guides students in their social relationships. Teachers employ practices that develop positive self-concept in students. Although the work of teachers typically takes place in a classroom setting, the direct interaction between teacher and student is the single most important element in teaching.

What society expects of teachers depends in large part on what it wants from education per time. National educational policies have been marked by an increasing concern for quality and relevance, especially in practical skills acquisition. Education systems in Nigeria, it is widely felt, are not performing effectively, not doing what they should be doing to ensure that the young

people passing through them learn well what they are supposed to learn and are well prepared to assume their future adult roles and responsibilities in the family, the workplace and the wider community and society. In many countries in Africa, Nigeria inclusive, there is a growing sense that education is the key to the future and that the challenges and jobs of tomorrow will require an education of better quality than that which most students receive today.

Increasingly, educational quality and relevance are defined by reference to students' learning outcomes. Yet if learning is to improve, teaching will need to contribute to that improvement. The importance of the quality of teaching, and therefore of teachers, cannot be overemphasized (Asia-Pacific Centre of Educational Innovation for Development, 1996).

Traditional educational systems, in which the teacher is the sole source of knowledge, are ill suited to equip people to work and live in a knowledge economy. Some of the competencies such a society demands includes teamwork, problem solving, motivation for lifelong learning cannot be acquired in a learning setting in which teachers dictate facts to learners who seek to learn them only in order to be able to repeat them. A lifelong learning system must reach larger segments of the population, including people with diverse learning needs. It must be competency driven rather than age related. Within traditional institutional settings, new curricula and new teaching methods are needed. At the same time, efforts need to be made to reach learners who cannot enroll in programmes at traditional institutions. According to the World Education report of 2008, corroborated by National reports presented at the 45th session of the International Conference on Education (1996), providing people with the tools they need to function in the knowledge economy requires adoption of a new pedagogical model. This model differs from the traditional model in many ways. Teachers and trainers serve as facilitators rather than transmitters of knowledge, and more emphasis is placed on learning by doing, working on teams, and thinking creatively. According to Kirimi and Wycliffe (2013), the increased emphasis on student autonomy in education has shifted the centre of gravity away from the teacher and closer to the student. Indeed, it has become the trend to focus on the learning and the learner than on teaching and the

teacher. However, it has to be recognized that teaching and learning are closely linked and that the purpose of teaching is to enhance learning. It is important to state that the changing role of the teacher is not neglected. The role of the teacher becomes that of facilitating learning rather than primary sources of information, instruction becomes interaction in the classroom and the students assume a more active role in the teaching and learning process. The students become increasingly responsible for their learning, giving them more motivation and setting the pace for them to become successful life-long learners. The teacher in turn becomes a resource, tutor and evaluator, guiding the students in their problem solving efforts. Though the teacher instructs the students, the teacher gradually removes the support offered to the learners as instruction and interaction continues and as the learners gradually internalizes and understands the content and are able to do more on their own.

C. Teaching Technology Education: Integration and Professional Use of Technology

From investigating instructor attitudes toward technology and the utilization of computers in schools, researchers concluded that the use of technology for curricular purposes is almost exclusively a function of teachers' access to that technology (Norris, 2003). Questions concerning teachers and teaching have emerged at the centre of debate over how education can make best use of the new information and communication technologies. This is a new key feature of professionalism in teaching, requiring an understanding of the pedagogical potential of technology and the ability to integrate it into teaching strategies.

The use of technology has long been the strength of Vocational/Technical education, but changing technologies and automation continue to alter the nature of work tasks in industries for engineers and technicians (Thach & Woodman, 1994), requiring employees to learn new ways to perform their jobs. The technical teachers as Educators, increasingly recognize that in order to teach creatively, teachers need to shift from traditional teaching toward approaches that help students incorporate technology into their learning. However, such a transformation of curriculum and pedagogy is a complex task for teachers who must develop new

knowledge, skills and attitudes themselves (Wiske, Sick, and Wirsig, 2001). To bring learning closer to the technology savvy students of the information society, Technical teachers need to develop technological competencies. The Teacher Technology Competencies are a set of technology standards that define proficiency in using computer technology in the classroom. The competencies consist of computer-related skills grouped into personal and professional use of technology tools and application of technology in instruction. the competencies are grouped into:basic technology operations; personal/professional use of technology; social and ethical issues and application of technology to instruction. In Basic Technology Operation, the Technical teacher must be able to demonstrate the use of a multimedia computer system with related devices in order to run programs; to access, generate, and manipulate data; and to communicate results. At this level, technical teachers need to be conversant with technological tools and their operations.

In the Personal/Professional Use of Technology Tools, Instructional staff will apply tools for enhancing their own professional growth and productivity. Technical teachers will use technology in communicating, collaborating, conducting research, and problem solving. Activities here include: specialized technical packages such as Auto CAD, electrical design softwares, building design softwares; databse management skills; Word processing; Database; Spreadsheet; Graphics; Multimedia applications; Telecomputing and Teacher/administrative Applications.

The Social, Ethical, and Human Issues- the technical teacher is expected to demonstrate knowledge of equity, ethics, legal, and human issues concerning the use of computers and technology. Issues of national policy on education, technology guidelines - ethics / Acceptable Use Policy.

In the Application of Technology in Instruction - the technical teacher is expected to apply computers and related technologies to support instruction in their grade level and subject areas. Technical teachers must plan and deliver instructional units that integrate a variety of software, applications, and learning tools. Lessons developed must reflect effective grouping and assessment strategies for diverse populations.

The single most important factor in determining the success of technology in the classroom is a teacher who is comfortable with and knowledgeable about computers. Yet many teachers, especially those who entered the teaching profession before technology assumed such a pervasive role in society, have had little or no special training in computers. Even teachers who can demonstrate basic computer literacy are unlikely to be familiar with the full range of tools that technology can offer, from spreadsheets to digital graphics to instructional software.

Just as technology pervades all walks of life and almost every field of human endeavor, technology skills are becoming essential in all subject areas because the computer is now the universal vehicle for the acquisition and dissemination of information in all fields. Technology belongs throughout the entire curriculum because of its extraordinary potential for enhancing learning. The learning process becomes active instead of passive because students control their own learning: students must think about and interact with what is on the computer screen. Since computers can radically expand information access and communication, they especially benefit industrial technology students by increasing their participation in the learning process. Just as other professionals utilize specific technologies as tools to enhance their work, teachers must likewise become adept in putting technology to use as the field of educational software evolves with the various academic disciplines. Regardless of grade level or subject, technology can support teachers in numerous professional activities — first and foremost in stimulating learning in the classroom but also in simplifying their administrative duties, improving personal productivity, and advancing professional growth.

According toMuir-Herzig, (2004), Technology itself is an interactive medium for manipulating our world, so the process of acquiring the technology competencies must necessarily involve ample hands-on practice, access to a wide range of tools, and, most important, an opportunity to discover the impressive possibilities of technology. Technology integration refers to the use of a wide range of technology tools across a broad spectrum of relevant and meaningful contexts. Although it must begin with fundamental computer skills, it includes any

technology application that enhances creativity, decision making, problem solving, collaboration, and overall productivity in the learning process.

In a learning environment where technology is truly integrated and not an adjunct, students and teachers use technology tools to enhance all areas of the teaching and learning process. For example, with computers students can access, organize, and analyze a vast world of rich resources — whether downloading original source documents from the Library of Congress or taking a virtual tour of a museum. Students on different campuses can collaborate on projects, sharing and accommodating their diverse perspectives. They can participate in original research projects that put them in touch with actual researchers in the field, and they can receive electronic mentoring from noted experts around the world. Technology gives students powerful tools for communicating what they have learned, motivating them to learn more.

Effectively managing a classroom where students engage in these activities in a manner that improves academic achievement requires a teacher with expertise in the sophisticated and increasingly complex field of instructional technology. The Teacher Technology Competencies are designed to give teachers this expertise to select and use the technological resources that not only meet students' learning needs but also equip them with appropriate skills for the future.

III. RESULT AND DISCUSSION

The Technical Teacher and the Challenge of the Internationalization of Education

According to Eugeniusz (2012), the globalisation process is a process in which the markets and economies of individual countries become more and more dependent on one another as a result of the continuous increase in the dynamics of goods, services, capital and people exchange. As the priorities of education have changed, so also have the training systems. Education, especially, vocational training systems is directly affected by the trend towards globalization. It has to be said that gloablisation has contributed immensely to the growth of African economies. However, it has also brought about changes to educational goals. As a follow

up to internationalization, education has become global and national systems are becoming obsolete. Globalisation has opened the door to competition, not just for market share, but job competition, one that favours occupationally mobile workers from anywhere in the world. For technical teachers in Nigeria, whose responsibility is to train skilled personnel for industries and multinational companies operating in Nigeria, the job is made more daunting, because the teacher has to develop skills in the student that will give the student-worker the level playing field to compete for jobs with other job seekers from other countries. A technologist trained in Nigeria should be able to compete with other technologists trained elsewhere in the world for jobs in his home country and abroad. This is only possible if the technical training received in his home country is world class and relevant. Furthermore, the goals of education in the knowledge economy have changed. In the knowledge economy, the labour force is called knowledge workers, engaged in handling information as opposed to more tangible factors of production. As the world economy transforms itself from the industrial era to the knowledge economy, it is the challenge of educators and training institutions to develop workers that can produce knowledge by learning how to source and utilize information.

In traditional post-secondary institutions like Technical colleges, internationalization initiatives include creating a more international curriculum, fostering opportunities for students to study abroad, encouraging faculty (technical teachers) and student exchanges, increasing international student recruitment efforts, and exporting or importing programmes and most importantly, creating a credit transfer system for sub-Saharan region.

The globalisation process requires the school to prepare students to play future social roles, and in particular for effective functioning in a modern democratic society, with special emphasis on effective functioning on the labour market. The point is to make them able to compete for a position with other potential candidates, not only from their own country, but from any country. According to Yang (2004) the school should equip students with suitable knowledge and skills that must be perceived as understanding the reality through personal experience and emotional reactions with the surrounding world of objects and specific situations. Such knowledge

should be preceded by appropriately designed and organised learning process – learning that brings about substantial changes in the perspective of individual vision and perception of the world (O'Sullivan, 2008). Referring to and adapting the approach of Graham and Phelps (2003) to the issue of teacher's role in the modern world, the teacher's most important tasks include: (1) Understanding and working in a defined school system; (2) Developing skills as well as the applied strategies and methods; (3) Teaching in the context of extended existing programme; (4) Integrating theory with practice, (5) Responding to social demands and problems; (6) Creating an atmosphere that facilitates learning; (7) Working in a group as a team member; (8) Assessing and forming lifelong learning habits.

IV. CONCLUSION

The teacher is made to teach in environments as provided by the government. Governments on the other hand are setting lofty standards and policies, expecting teachers to implement them. While the pressure from governments and the need to reform education is being grappled with by the teacher, changing roles of work occasioned by new occupational areas created by technology as well as new frontiers created by internationalization are opening new challenges for the technical teacher. The technical teacher, then, needs to be knowledgeable in him, improving on his skills, knowledge and experience for him to be able to impart new and relevant skills to the students. Until the education of the teacher is taken as paramount as that of the student, no student will ever be better than his/her teacher. Then, it is possible, the educational system in Nigeria may just be going round in circles, without having to break free into the mainstream and join the elite educational systems in Africa.

V. RECOMMENDATIONS

Based on the issues discussed, the following recommendations were made

1. The ministry of education should engage in periodic training of technical teachers on new technologies and applications to enhance their technical skills.
2. The ministry of education should engage in periodic training of technical teachers on new trends in their

chosen fields, to improve their knowledge of their chosen professions.

3. The ministry of education should consider credit transfer system for the West African sub region, where a student can start a technical course in Nigeria and finish in any other participating country in West Africa.
4. The introduction of technology both as a professional tool for teachers and as an instructional tool should be promoted and supported by the ministry of education.
5. The federal ministry of education should consider a review of technical college training programmes in the light of internationalization of education.
6. The ministry of education should consider employment of new technical teachers to meet the shortfall in technical college teachers.

VI. REFERENCES

[1] Asia-Pacific Centre of Educational Innovation for Development (1996). Partnerships in Teacher Development for a New Asia, pp. 391–2, Bangkok, UNESCO. Report of an International Conference organized by UNESCO and UNICEF in association with the Office of the National Education Commission, Thailand, held in Bangkok, 6 – 8 December 1995.

[2] Canada.(1996). The Development of Education. National reports presented at the 45th session of the International Conference on Education. Toronto, Council of Ministers of Education .

[3] Eugeniusz Stanislaw (2012). The Professional Role of a Teacher in the Era of Globalization on the Example of Poland. Educational Research eJournal. 1(1): 61-70

[4] Graham, A. & Phelps, R. (2003). Being a teacher: developing teacher identity and enhancing practice through metacognitive and reflective learning processes , Australian Journal of Teacher Education, Sydney , Austaralia. 27 (2): 11-24.

[5] Harden, R.M and Crosby, J (2000). The Good Teacher is more than a Lecturer. The Twelve Roles of the Teacher. Medical Teacher, 22(4):334-347.

[6] Kirimi, J.K and Wycliffe, A. (2013). Teacher's Productivity in Promoting Quality Education in

Public Secondary Schools in Kenya. Academic Journal of Interdiciplinary Studies, 2(2):365-378.

[7] Thach, L., & Woodman, R. W. (1994). Organizational Change and Information Technology: Managing on the Edge of Cyberspace. Organizational Dynamics, 23 (1): 30-46.

[8] Mahmood, T. (2013). Assessing the Pedagogical Competencies of Teacher Educators in the Teacher Education Institute of Pakistan. 2(1)

[9] Muir-Herzig, R.M. (2004). Technology and its impact in the classroom. Computers & Education, 42, 111-131.

[10] O'Sullivan, E. (2008). Finding our way in the great work. Journal of Transformative Education, 6, 27-32.

[11] World Education Report (1998). Teachers and teaching in a changing world. United Nations

[12] Educational, Scientific and Cultural Organization, Place de Fontenoy, Paris.

[13] Yang, B. (2004), Holistic Learning Theory and Implications for Human Resource Development, Advances in Developing Human Resources, 6, 241. SAGE, online version: http://adh.sagepub.com/cgi/content/abstract/6/2/241.