

RESEARCH ARTICLE

## Introductory Technology as it Impacts Modern Society in the World (Nigeria as a Case Study)

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### Abstract

Technology may be defined as the tangible and immaterial things created either by application or mental and physical work in order to achieve a goal. Technological education, from the other side, does not concentrate on a certain job path but rather on providing fundamental technical skills. As a result, while all technical education programmes are technical in nature, not all technical education programmes are vocational in nature. This subtle relationship explains the interchangeable usage of both names in scholarly literature. According to Nigeria's national education plan, technical education is focused on the development of highly technological human resources with the goal of producing a national pool of skilled and self-sufficient artisans, technicians, including technicians in technical and vocational fields. Education is just a "par excellent" tool for national development in the world. Non-governmental groups, communities, and people have all actively participated, as has the government. As a result, it is vital for the country to articulate clearly and unequivocally the philosophy and aims that motivate its investment in education. That was what the National Education Policy wants to achieve. According to the study's findings, one of most endemic difficulties militating against participants' performance throughout introductory Technology are really a lack of training infrastructure, a shortage of teaching staff, insufficient discovering, a vast curriculum, poor appreciation and compensation, as well as inefficient guardian and counseling center.

**Keywords:** Technical; Material; Introductory

### Introduction

Technology is a collection of techniques, skills, methods, and processes that are used in the production of products and services, or the pursuit of objectives like scientific research. Technology can be described also as knowledge of procedures, processes, and such, or it can be encoded in machines that allow them to be operated without a complete grasp of how they function. The most fundamental type of technology is the creation and usage of fundamental tools. The Neolithic Revolution and the prehistoric discovery about how to manage fire increased food availability, and the invention of the wheel made it simpler for humans to move and control their environment. The printing press, the telephone, and the Internet are examples of historical developments that have reduced physical barriers to communication and allowed humans to engage freely on a worldwide scale. There are numerous effects of technology. It has fostered the emergence of the leisure class and the development of much more contemporary economies (particularly today's global economy). Many technological processes produce undesirable by-products, like pollution, and resource depletion, both of which impair the Earth's environment. Innovations always had an influence on a social standards

and have resulted in new ethical issues. Only two examples are the creation of the notion of efficiency of human production and questions of bioethics. Philosophical debates have emerged on use of technology, including disagreements over whether it improves or exacerbates human conditions. Neo-Luddism, anarcho-primitivism, and other reactionary movements decry technology's pervasiveness, claiming that it harms the environment and alienates people; proponents of transhumanism and techno-progressivism, on the other hand, see continued technological progress as beneficial to society and the human condition (Liddell et al, 1980).

Technical education, on either hand, facilitates the acquisition of practical and applied skills as well as basic scientific knowledge. Technical and vocational education in the world has had a stormy history. Because of its shaky origins, educators in general misunderstood this aspect of education. On a conceptual level, educators struggled to differentiate between technical and vocational education, while society was taught to believe that vocational education is solely for those unable to complete academic programmes. In this context, technical - vocational education has grown steadily from its beginnings to the current day (UBE, 2001).

Technical personnel training in the world has faced several challenges, including policies unassociated to our

problems, curriculum with no linkage to workplace and social needs, misappropriation intended for academic reform, lack of job satisfaction, insufficient facilities, inadequate funding, brain drain, poor training staff, bribery, and corruption. Again, technical education makes a significant contribution in areas such as electrical and electronics technology, metal work technology, mechanical/automobile technology, building technology, and woodwork technology, among others. Technical education is a practical-oriented education that is distinct in its content and approach, requiring special attention. Digital technologies are fast expanding, presenting new opportunities as well as new threats for our society, and organizations of all types are hurrying to adapt their plans and activities in response. Corporations and governments were restructuring in order to enhance output, improve quality, and reduce expenses. Entire sectors have been reinvented to better fit the digital era's reality. It is not an exaggeration to say how information technology is fundamentally transforming people's knowledge interactions. In terms of our nation's capacity to preserve a healthy democracy and economy, the information age has significantly raised demand in university-level education; lifelong learning is indeed a private and a societal benefit. However, while information technology has the potential to improve and enrich teaching and research, it also looks to offer some risks to our schools and universities (Katz, 1999; Duderstadt, 2000) in their present incarnations. We can now give educational services to everyone, anywhere, at any time, thanks to sophisticated computers and networks. Technology has the potential to generate an open learning environment in which the student evolves into a more active and demanding consumer of educational services, no longer obligated to make the journey to a specific location to participate in a pedagogical process involving deeply integrated studies based primarily on lectures or seminars given by local experts. Faculty intellectual communities are likewise moving away from physical campuses and toward virtual ones that are dispersed throughout cyberspace. Furthermore, technology improvements are propelling the creation of new for-profit rivals as well as the establishment of large markets for educational services, both have the potential to revolutionize the higher-education business (Goldstein, 2000; Shea, 2001).

Prior to the establishment of a 6-3-3-4 system, this was recognized while our schools' curriculum were just too wide intellectually yet failed to meet the requirements and ambitions of the country. Rather of generating job creators, the system created job seekers. The 6-3-3-4 method was created in 1982 in response to a demand for a realistic curriculum that would meet the nation's requirements and ambitions. The curriculum includes pre-vocational topics including such basic technology, home economics, and business education that are required in Junior Secondary Schools. Woodworking, metallurgy, basic electricity/electronics, building construction, technical

drawing, plastic and rubber technology, and auto/mechanical work are all covered in beginning technology. The foundation for the learning of core technical skills and knowledge is laid forth in introductory technology. If students are unable to pay for their education after Junior Secondary School, the skills as well as information learned at this level will help them to be self-sufficient, which is incredibly valuable. The 1969 National Curriculum Conference, which brought together a diverse group of Nigerians, highlighted the necessity for a national education strategy. The meeting was called in response to widespread dissatisfaction with the incumbent educational system that have grown isolated from national needs, aims, and ambitions. In 1973, a conference of professionals representing a number of members in the world interest organizations was organized in response to the National Curriculum Conference. Representatives from non-governmental organizations and other groups attended the conference, which focused on what a national education strategy for just an independent and sovereign the world should seem like. After gathering comments from states and other interested parties, the seminar created a draught paper, which has become the final document, the National Policy on Education, which was first published in 1977 (NPE, 2004).

#### **Technical education in some part of the world**

According to (Uwaifo, V.O, 2009), technical education is the education of technically minded individuals who could be the catalysts, facilitators, as well as implementers of a country's technological advancement. He believes that teaching the populace about the need of being digitally literate would ultimately lead to self-sufficiency and sustainability. He argued that technical education, more so than any other profession, has a direct influence on the country's prosperity. Because of technical education's inability to successfully employ scientific concepts to promote technology, some part of the world's poor rate of industrialization and technological growth might be related to a growing gap between science and technology. This suggests that some part of the world's technical education programmed should be revamped. The overhauling of curricula may not necessarily result in the production of highly literate technical education experts or ready-made graduates for industry, which may result in rapid industrialization or economic growth of the country, unless solutions are proposed to some constraints that may militate against positive outcomes, but it will adequately equip our youths with the relevant skills needed for their daily lives. Technical educators face the most difficult task in persuading legislators that the programme deserves priority attention in resource allocation. Many strategies for achieving favorable results have been promoted at various fora, such as lobbying, participation of technical educators in governance, wooing, and so on, but the

government continues to take a skewed approach to the program's proper growth in the world. It is impossible to overstate the importance of technical and vocational education in driving economic growth. Without an army, no country can wage war. Similarly, without well-equipped technical and vocational schools, some part of the world will not be able to thrive. It is a gap in some part of the world's development strategy (Duke, V.E, 2009).

The National Board for Technical Education (NBTE) and instructors in this sector should lead a movement to boost vocational education financing and improve its image in society, as it has in many other cultures. Those part of the world should immediately start implementing policies aimed at repositioning technical education inside the expanding global economy in order to compete effectively. Reviving this industry is one of the measures to enhance young economic opportunities, according to the United Nations Educational, Scientific, and Cultural Organization (UNESCO). The Nigeria Labour Congress (NLC) and its associated unions may also be able to assist in this regard by building functioning vocational training centres in local government cities where people may acquire new skills (Ojimba, D.P, 2012).

By administering commercial and technical tests, the Royal Society of Arts (RSA) and the City and Guilds of London Institute (CGLI) in some part of the world-controlled craft-level technical education. These committees continued to supervise the study of technical fields even after the establishment of WAEC (West African Examinations Council) in 1952. In 1960, WAEC began acting as an agency for these organizations. Due to foreign restriction of what was taught at technical colleges, curricula were not designed to meet specific national development needs. In addition, trainees received little or no general education to supplement their chosen trades. WAEC took over the administration of examinations in various technical and commercial subjects from RSA and CGLI in December 1972. The federal government decided to augment the CGLI with a technical college-issued certificate known as national Craft Certificate as part of this framework (FCC). The Federal Craft Certificate took into account the practical aspects of the crafts assessed by CGLI. Practical sessions were included to the assessments after WAEC took control in 1978. Despite this, the technical college curriculum for such trades did not contain additional general education. As a result, graduates of these institutes were unable to secure admission to universities. As a consequence, technical education's credibility as both a programme for students with academic difficulties has remained tarnished.

### **The national policy on education**

The 1996 National Curriculum Conference, that brought together a diverse group of Nigerians, highlighted the necessity for a national education strategy. The meeting was called in response to widespread dissatisfaction with

the incumbent education systems, which had grown isolated from national needs, aims, and ambitions. During the National Curriculum Gathering in 1973, a conference of specialists from various part of the world interest groups was convened. The conference, which included members from non-governmental groups and foreign organizations, examined what a national school strategy for just a self-governing in some part of the world should seem like. Because education is the most essential tool of charge, this will serve as a crucial priority in national priorities. Any significant alteration in the intellectual environment will be recognized in education. The goal of the policy's far-reaching initiatives, according to the administration, was to revolutionize all elements of the nation's time. To do this, the government formed a National Education Implementation Committee that transform the policy into actionable plans for the agencies responsible for implementing it. The Group was also entrusted with devising an instructional strategy for the monitoring as it developed. The government's education strategy is the government's method to realizing predicted impairments one after another, among each person's potential; that portion of the aims that can be achieved via education. No education strategy, on the other hand, can be formed without first identifying the country's overall philosophy and aims. The administration understands the importance of language in fostering social cohesion, national unity, and cultural preservation. As a result, every baby is forced to learn the language over his or her immediate surroundings. Furthermore, for the sake of national unity, every kid should be required to learn one of the 3 world languages: English, Arabic, or French.

Encourage the training of a sufficient pool of qualified or before schoolteachers, contribute to the development of regular learning, supervise and control the quality of such institutions, and establish pre-primary sections in existing public schools are all government pre-primary education responsibilities. Six years of basic school and three years of junior secondary school will make up basic education. It would be both optional and free. Adult and non-formal education systems for adults and out-of-school children will be offered at the primary and junior secondary levels. At this article, primary education refers to the education delivered in institutions to children aged 6 to 11 years old. The primary level is crucial to the system's successes or failures since it forms the foundation for the rest of the educational system. The time frame will be six years. After finishing elementary school, but before beginning university education, children undergo secondary education. The junior secondary school will offer combined pre-vocational and academic instruction. Tuition will be provided free of charge, to all students, and will be required. It will cover key topics that will allow students to expand their knowledge and skills. The senior secondary school must be comprehensive, with such a core curriculum aimed at broadening pupils' knowledge and perspectives. Forms of functional education delivered to

adolescents and adults outside of the conventional school system, like functional literacy and vocational education, are promoted through mass literacy, adult, and non-formal education. The teaching and learning of scientific processes and principles should be emphasized in science education. This will lead to basic and applied science research at all levels of schooling. After secondary school, tertiary education is provided through universities, colleges of education, and polytechnics.

Distance education should encompass all forms of contact, no contact, and part-time education.

Open/Distance Education is a teaching method in which students are separated from the teacher in both time and space. Special education is a structured special education programme that trains people with special needs (including children and adults). To provide appropriate education for all people with special needs so that they can contribute their fair share to the nation's growth. The implementation of educational policy, as well as the implementation of educational policy, is made easier by the education service. Planning, efficient administration, and enough financial resources are critical to the success of any educational system. Administration is a function of organization and strategic leadership, as well as control, inspection, and monitoring. Education is a costly social service that necessitates adequate financial support from all levels of government to ensure that educational programmes are implemented successfully. The goal of the government is to make education free at all levels. The federal, state, and municipal governments, as well as the private sector, share responsibility for education funding. In this regard, the government invites and encourages engagement from local communities, people, and other groups (Katz, 1999; Duderstadt, 2000).

### **The impact of introductory technology**

Technological improvements might have an impact on how the research institution fulfils its social mission. Inside an increasingly global society connected together with technology, without a single cultural context to provide a "filter," the function of traditional discipline canons is altering.

The quantity and quality of beginning technology teachers appears to be terribly inadequate, according to evidence. Despite a serious insufficient resources while teaching the subject, it is equally important to establish the extent of the issues that prohibit students from achieving well in introductory technology in some part of the world and other locations. Unfortunately, resources for teaching this important matter in our schools are woefully inadequate, especially in some part of the world, where several buildings to accommodate the tools / machines need not to exist, some have structures, equipment, and machineries but no power generation or workshop, making it hard to install the appliances / machines. Students who have finished Introductory Technology in junior secondary

school seldom display fundamental technical talents, and as a result, they are unable to overcome the majority of the barriers they face in the labour market. A lack of tool understanding and insufficient workshop arrangements, a shortage of skills teacher, poor monitoring and counselling, and a broad curriculum are some of the problems that students face in Introduction Technology now at Junior Secondary School Level.

The purpose of this study is to investigate the factors that impact students' achievement in introductory technology in some part of the world junior secondary schools.

- i. Identify the elements that contribute to students' low performance in Introductory Technology.
- ii. Evaluate the state of technical teachers' services.
- iii. Address the need for assistance and counselling for students in schools.
- iii. Evaluate introductory technology teachers' effectiveness and efficiency.

Introduction technology was an integrated course that encompassed woodworking, metalworking, basic power generation, construction techniques, technical drawing, plastic as well as rubber innovation, and auto/mechanical work. The foundation for the learning of core technical skills and knowledge is laid forth in introductory technology. If students will be unable to complete their studies beyond Junior Secondary School, the skills and knowledge gained at this level would enable individuals to be self-sufficient. The curriculum that must be created should encourage these kids to find, select, and create items using local resources. They should be taught the fundamentals so that they can develop the abilities required for the country's technological development.

Considering this, I recall reading in the media about the federal government's plan to establish a machine tools industry in the country to provide a means of obtaining spare parts for machines and industries, thereby reducing the need for importation, and preserving our limited foreign exchange earnings. In the long run, it is hoped that it would work in tandem with the Ajakuta steel complex in Nigeria for example. This effort was made possible by the establishment of research institutions such as the Nigerian Stored Products Research Institute (NSPRI) in Kano, which developed a new way of preserving fruits and vegetables, The cocoa research institute of Nigeria (CRIN) in Ibadan, the forest research institute of Nigeria (FRIN) in Ibadan, the federal institute of industrial research of Nigeria (FIIR) in Lagos, and the project research organization development agency (PRODA) in Enugu, which are developing prototypes of machines such as corn-thrashers, palm oil extracting machines, yam peelers, and baking machines, will form the foundation of our self-reliance and effective use of our local resources. It may be of interest to members to know that Professor R-rovon, the federal minister of science and technology, recently

authorized two of these research bodies (PRODA) and (FIIR) to build a prototype Nigerian car to minimize high car prices and reliance on imported components (NN 5/2/87).

There is no single country in West Africa that has as many vehicles assembly plants, radio and television assembly plants, oil mills, cement and brick factories, and a host of others that continue to import all spare parts for their machinery as well as raw materials from outside the country as Nigeria. The envisaged machine tool industry and technical research institutes' involvement in Nigeria's future industrial growth is so critical and strategic.

This is like the proposal by the Nigerian Council of Heads of Technology Institutions (COHEADS) to hold a national exposition on technological education. This exhibition aims to showcase the achievements of our polytechnics, universities, and colleges to all Nigerians.

For this purpose, the country is divided into four zones, each with a sub-committee charged with inspecting and approving exhibits to be displayed from member institutions. I am a member of Zone A, which includes all polytechnics in Kaduna, Sokoto, Niger, and Kwara states. One can question how far our polytechnics and universities have progressed in using local resources to produce and minimize importation equipment and machinery in educational, agricultural, housing, and environmental, arts and textile design, machine tools, mining, and metallurgical fields. We had inspected projects such as chemical manufacture utilizing local millet maize, floor tile production using local clay, and solar energy equipment production (solar distillatory, baking, oven etc.). There are polytechnics that can make corn thrashing machines out of scrap metal. Once started, the machine has an entrance through which corn is introduced, and after passing through the system, it separates the corn from the stalk at various locations for collecting. Another polytechnic (IMT Enugu) has developed a machine that can turn waste papers into ceiling boards and other products.

### **Conclusion and recommendation**

Finally, technicians all who attend technical colleges should be properly and adequately paid. The distinction among holders of 'Basic Studies' credentials and technical certifications in the public sector must be abolished not just as a policy matter, but also in the minds and attitudes of government personnel. Technicians are not seen as second-class citizens. It's a question of choice, so we should start teaching our kids about it in elementary school. Some part of the world's educational system is in desperate need of reform. The study's findings will inform government policymakers, educational authorities, and classroom teachers, as well as industry and society at large, about the problem of pupils' low performance in technology introduction in junior high school that, if not fully addressed, can quash the nation's technological progress.

The outcomes of the study will help technical teachers modify and fix their faults, as well as improve on their prior efforts in order to do better. I believe the government should do everything necessary to abolish the distinction between universities with technical institutes as soon as feasible. Polytechnic colleges should be able to offer degrees. Not only will this attract more undergraduate persons towards vocational/technical education, but will also motivate qualified lecturers/instructors to switch between the two systems. To enhance cross-fertilization of thoughts and technology transfer, our technical institutes must establish favourable contacts and linkages with similar institutions abroad. By doing so, technical institutions will have access to new developments, exchange programmes, and other benefits that are available at universities with well-developed technical programmes. Once technical institutions with industries collaborate, the parties are able to recognize and respect each other's needs, allowing them to deliver the finest solutions for society's benefit.

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