

**Managing Change as a Sustainable Strategy in Technological Education for National
Development.**

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Abstract

The study examines managing change as a sustainable strategy in Technology Education (TE) for national development. TE is the education designed to empower its recipients through acquisition of general and specialized skills in the practical art. The kick-off of technology education till date and its onward development are stated. Various achievements are analyzed and the need to conserve the gains becomes the concern. Probable sources of resistance and the approaches in managing change are stated. Certain recommendations like activating and reinforcing Research and Development department for monitoring and evaluation and others are mentioned.

INTRODUCTION

Technological education had a slow start and developed less quickly than other forms of education in Nigeria. This was partly due to the fact that the voluntary agencies which pioneered western education in Nigeria were unable to increase or popularize it on the same scale as literary education, since the former is more expensive in terms of staff and equipments. The situation became more complex by the fact that most British colonial policy-makers were literary men and women who studied classics.

Major education expansion at the post primary level took place between 1955 and 1965 which was the era of self-government and self-determination. In the North, craft schools were established for prevocational needs of pupils for 3 years. Successful candidates seek semi-skilled employment in commerce and industry. In the south, trade schools after five-year training for primary school leavers, technical schools offer courses in specific trades while trade centres offer 3 years training for

trade and specific courses. All their courses led to London City and Guild certificate. Commercial schools offer training in subjects such as typing and shorthand, accounting, principles of economics and other academic subjects on completion received the Royal Society of Arts certificate. Comprehensive schools offer general education in academic subjects, commercial, technical and agricultural training and home economics. Along the way some secondary schools started modifying their curricular to reflect one or two specialized programmes particularly commercial and agricultural sciences.

As the nation grows, there was the need to review the national philosophy of education. The Taiwo committee 1968 was to answer questions under formation of science and technology such as “what is the significance of science and technology in the individual and corporate life of Nigeria? How can science and technical concepts be built into the education programme without destroying the fundamental values we live for?” Certain recommendations were made that became the basics of our technology education today (Fafunwa, 1977:195).

By and by, a move to change the names and functions of the existing trade centres, technical institutes and colleges was made in Northern and Southern Nigeria. The craft and trade centre changed into technical colleges while some technical colleges became polytechnics providing courses in higher studies at ordinary and higher National Diploma levels as well as some colleges of education to train hands for the developing needs of teachers for these courses. Other existing institutes broadened their curricula to accommodate vocational and technical courses. Universities were not left out, also opportunities were given for successful candidates under the Technical Teachers Training Programme (TTTP) sponsored by the Federal

Government of Nigeria for the provision of more adequate and competent man-power to face the challenge of Technology.

THE PROBLEM: In 1986, the first National Science and Technology Policy was formulated with the realization of the need to sustain the overall national development through effective application of scientific and technological skill, for the production of goods and services. Due to poor follow-up, it could not be sustained. Until 1990 when a National Committee was charged with the task of producing a blue-print which will be the aggregate of policy proposals, institutional arrangement strategies, funding requirements, financing as well as the implementation of action plans. By 1991, the report was submitted and by 1992 January, the implementations were fully set. Universities of technology were established, science technical colleges were instituted, and the Teachers Technical Training Programme (TTTP) scholarships were activated and indigenized. All these for development, promotion, popularization and information dissemination on the field of Agriculture, Health, Education, Industry, Energy and Engineering. National Policy of Science and Technology.

The revised policy has brought about the accomplishment of appropriate cutting-edge technologies that is propelling the country through and beyond the 21st century. This visionary policy has been designed to underpin the nation's socio-economic progress and development. It emphasized the need for coherent and systematic approach to the determination of technological programmes and their implementations. It took into accounts domestic production in agriculture and rural development, education, energy and environment health, food, security etc. (National Policy on Education).

The contemporary situation in the country requires actions that will go beyond growth in order to consolidate the procurement of technology. History repeats itself but history should safeguard repetition that will bring stagnation or regression. Many worthy programmes and noble policies had been adopted but were never sustained. Thus, it is appropriate to look at a transparent agenda that is consistent with the nation's long-term objectives of managing these changes as a sustainable strategy in consolidating the gains of technological education for national development in Nigeria. This paper now considers the way the gains can be managed, strengthened and nourished.

CONCEPTUAL FRAMEWORK 'Change' means 'modification', 'transformation', 'variation', remodeling'. It involves re- organization and sometimes transformation. It implies introducing something new into an environment (Advanced Learners Dictionary, 2003). All these meanings have been accomplished in technological education for National development.

Technology education, according to Miller (2005) is a systematic way of exposing individuals to the practical task for developing and producing goods and services to meet the needs and wants of man. It is the education for impartation of saleable skills to individuals aiming at self reliance. Since the campaign for Technological Education, much has been attained. Presently, among the gains are (i) Above average supply of qualified personnel to meet the challenges of science and technological education especially for the primary, secondary and even tertiary institution. (ii) Little dependence on expatriates on technological fields.(iii) Technical Teachers' Training Programme (TTTP) Scholarship still in progress. (iv) Wider

career choice for scholars with freedom from the unchallenging methods of learning that is void of development skills and aptitudes. (v) The SIWES programme is already established for technological education in the Polytechnic and University undergraduates.(vi) Technological education is no longer looked down on but now assumes the same status with other courses.(vii) Availability of textbooks and other related materials and equipments to facilitate teaching – learning procedure in TE. (viii) Workforce diversification in terms of gender, age and ethnic groups. (ix) Nigerian’s intelligence is given recognition as our students participate in world competitions on-line and winning. For example ,“Dara ‘Lawon, an SS II student of Bodija High school, Ibadan led the U.S. International competition 2004, emerging winner over and above the whites. The candidate is presently in USA on scholarship for further study. (x) More Nigerians now travel abroad for manpower development and also employment in technology (The Exchange Programme inclusive). (xi) The growth of entrepreneurship among Nigerians. (xii) General consciousness in the use of information technology and much progress in computer literacy. (xiii) Rapid changes in the nature of work and work place due to technological skill acquisition and application.(xiv) Influence of technological Education as contacts and communication for employment in all types of industries through on-line, G-mail, e-mail, fax-machine, scanning or Internet. (xv) Extensive and unlimited development as more research and innovative ideas creep up.

The consummation of these innovations is the ability to manage them for sustenance and maintenance. Sustainable development according to Ebuoroajolo (2005) is the development that meets the needs of the present without compromising the ability of future generations’ to meet their own needs. Weilrich & Koonty (2005)

also stated that innovation and change go hand in hand. It may be technical, process or administrative. Innovation of any type is likely to require organizational change. It is the transformation in the design or functioning of an organization. Implementing innovation is likely to require major organizational changes but sometimes it involves smaller adjustment.

Obviously, in the educational phase of Nigeria, technological education has passed through the above stage but now to consider maintaining and sustaining the change hitherto.

PROBABLE SOURCES OF RESISTANCE: In stabilizing a change, there is need to consider factors that could stand as threat to the onward survival of a system. Sometimes, it may be destructive criticism, malicious non-compliance, sabotage, insincere initial compromise, silence and in-your-face defiance. Hellriegel, Jackson & Slocum (1999) gave five reasons why changes are resisted and unsustainable. (i) Fear of what the future offers and assurance of continuity. For instance, when Mercedes Benz Credit Corporation restructured its operations, employees were fearful of the future. “It was absolutely essential to establish a no-fear element in this whole change process”. Employees thereby were empowered to decide on modes, to make the change work and incentives were offer for job security. (ii) Failure to develop the required competencies for continuity and reluctance to change their attitude to cope with the new. (iii)Vested interests by people who have some personal gains and investments in the previous systems are still looking into going back to the past instead of foreseeing a different and better future. (iv)Misunderstanding of implications and lack of trust in any policy because of previous up and down attitude

to past policies. (v) Differences in assessment of the program by the generality depending on acquired information levels and expectations. Others may be exhaustion or obsolescence of supplies due to finance, unavailability of materials or bureaucratic delay; Political Ideology of the ruling party; ignorance of the reason for such dynamic change, efforts and investment not comprehended by people involved; role ambiguity; inaccurate role perception etc.

APPROACHES IN MANAGING CHANGES The achievement recorded thus far in (TE) must be sustained. Cole (2003) subscribed that the better way of overcoming resistance is by focusing on removal or at least weakening of the objectives and fears of the resisting side. Therefore the following management techniques would be of assistance. (i) Continuous application of innovation and Research findings. Obasanjo (2006) explained that the hope of sustaining the on-going reform in the application of Science and Technology lies on continuous application of innovation and research findings in all spheres of the national life. (ii) Identify priorities and targets for continuous monitoring for evaluation to ensure the change process remains. (iii) Accommodate modification to suit the internal and external environment i.e Political, Economic, Social and Technological analysis of the nation. (iv) Cooptation of political officials into the decision-making process on TE to obtain their continuous endorsement. (v) Regular education and orientation to update the literates and illiterates on the advancement in technology.

Galpin (1996) postulated some useful hints titled ‘build the Architecture to support change initiatives’. These hints include (i) Develop records of lessons learnt from change efforts and use them to manage future change efforts. (ii) Train

personnel on structured approach to change rather than relying on instincts or intuition. (iii) Create opportunities for employees to work in cross-functional teams for team work and communication competencies to maintain change. (iv) Identify key measures that can be used to regularly assess organizational performance. Regularly assess against these framework to establish a baseline in case of deviation which stability of such can be assessed.

RECOMMENDATIONS

- The Research and Development department of the Science and Technology education in the federal and state level should be activated and charged with the intensive work of monitoring and evaluating the field work to ensure no deviation from parameters and discover area for overhauling.
- Technical Teachers at all levels be mandated to join NATT either at school level or individual level in order to update their acumen in technology education, attend conference as a refreshing course and establish no-fear element in this change.
- Sensitization of the public and students on the development and accomplishment of technological education through periodicals or news bulletin in form of subsidized leaflets and pamphlets. This will enhance confidence in the new scheme and freely let go off the past.
- Organizing seminars and conferences for policy makers on the need to stabilize TE since it is the bed rock and progress vehicle for national development.

CONCLUSION

The history of education in Nigeria was traced from inception to technological education advancement age. Technological education requires more than teaching

facts and imparting information. It is a process of inculcating a healthy scientific attitude to work and life. Much has been achieved through TE in Nigeria hence the need to prop up those changes for abiding and progressive reasons. Possible causes of sliding away because of fear, misunderstanding of implications etc were analyzed and certain approaches like continuous application of innovation and research findings were highlighted. Some recommendations like activating Research and Development department education for monitoring and evaluation and others were mentioned.

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