



Review Article

THE ROLE OF TECHNICAL EDUCATION IN A REFORMING ECONOMY: THE NIGERIAN EXPERIENCE

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ARTICLE INFO

Article History:

Received 05th December, 2014
Received in revised form
26th January, 2015
Accepted 08th February, 2015
Published online 31st March, 2015

Key words:

Consequently,
Innovations,
Technological,
Advancements,
Middle-level,
Documentary.

ABSTRACT

History has shown that technical education is an important factor in the growth and development of any nation. The reality of today also indicates that technological advancements and innovations have touched virtually every aspect of life. Therefore, any nation that fails to take the production of technicians seriously has sentenced itself into perpetual underdevelopment. It is against this background that many countries including Nigeria mapped out strategies in promoting technical education. The objective of this paper is to discuss the role of polytechnics in providing sufficient manpower for technological development and nation building. It is also the objective of this paper to find out whether educational reform, and in particular neo-liberal economic reform affects technical education in Nigeria, thereby highlighting the challenges that have halted technological breakthrough. Consequently, the paper employs documentary sources for the generation of relevant data for the study. The paper concludes by suggesting that given technical education the pride place it deserves, polytechnics could perform their role of turning out middle-level manpower required for the growth and development of Nigeria.

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INTRODUCTION

Technical education is an important instrument in promoting social and economic development particularly in a reforming economy. Ostojic cited in Osagie (1994), put this important role of technical education very succinctly when he said; Technical advancement is a basic characteristic of the contemporary world which has an increasing impact on worldwide contrasts and which will exert greater influence on the position of each country and on the overall international economic and political relations. Accordingly, technological development and its rapid progress in every country has become the basic premise for the establishment of favourable international relations and political independence. Lagging behind in this development or worse still, failure to take part in it can lead to a country's economic inferiority with serious economic and political implication (1992). The urgent need of reacting to policies on important issues such as food, infrastructural maintenance, depletion of resources, expenditure of energy, production of pollution waste products and other problems of this nature, has become obvious.

Such issues have a sociological content and it is clear that technical education (technology) have a major role to play. It is against this background that, the world economy in the last few decades experienced rapid transformation. Economic systems and social values are being reformed all over the world. This is traceable to what is termed as globalization. However, from whatever perspective, the world economy changes, technical education is an important instrument in this development. Nigerian could not be left out of this process, being tailored along neo-liberal relations. In the last thirteen years, Nigeria has experienced a new dawn in policy shift and economic management by the strong desire to reform the legacy of the past few decades. This reform is to be reflected also in the education sector. The impact of neo-liberal reforms have been felt both qualitatively and quantitatively. Thus, the Polytechnics that have long history of turning out middle-level manpower needed by the economy are seriously under threat in Nigeria in terms of roles.

As Jega observes: Education in general, from the brutal assault it is being subjected to by the ravaging band of the African elite controlling state power who have been infected by the neo-liberal reformist virus, and who are glorifying the private over the public and failing to see the significance of public institutions and their necessary and fundamentally critical role

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in national development (2007:3). This underscores the fact that, the character and nature of the state determines its attitude to education in general and technical education in particular. In a world that is technology-driven, a country that fails to take the production of technicians seriously such as Nigeria has sentenced itself to perpetual backwardness. Throwing his weight behind this point, Aturu observes: The development strategy adopted by the state to a large extent determines its attitude to and policy on technical education. Due to the peripheral role which the Nigerian state plays in international capitalism, particularly its being content to supply raw materials to the advanced capitalist countries, it cannot see the need to develop technical skills in the citizens, hence the neglect of technical education. Related to this is the fact that the elites which compose the state are mainly rent-seekers and so we have a rentier economy which encourages foreign investors such as multi-national corporation to exploit our resources with their own technical knowhow while the Nigerian state receives commission (2011:1).

The main submission of this presentation can simply be summarized as follows: that the bedrock of technological breakthrough for Nigeria is centered on technical education. Technical institutions / Polytechnics offer highly technical, scientific as well as research oriented education to students. However, most Nigerian polytechnics that provide technical education are synonymous with structural decay occasioned by lack of adequate funding; neglect and misplaced priority on the part of the government on one hand and society on the other. If present trend continue, the economic and technological status of Nigeria is bound to deteriorate. The country would lose comparative advantage in a wide spectrum of commodities and become increasingly dependent on foreign countries. The technological breakthrough of South Korea and Indonesia for example, centre on significant investments on technical education. Related to this is the radical land reform to create a thriving rural economy based on small farm production, and supported the development of rural industries that produced the things needed by small farm families, which subsequently became the foundation of larger industries.

According to (Aluko, 2005), contrary to the historical revisionism of corporate libertarians, the development of South Korea and Indonesia was equity-led, not export-led. Only after they have developed broad-based domestic economies did they become major exporters in the international economy. The neo-liberal paradigm might not provide the most adequate basis for reforms in Nigeria. It must take into account Nigeria's history, the level of technical education, and the nature of its dominant special formation. The reform of an economy must first and foremost begin with analysis and understanding of its people. This is because; it is only the people that can reform an economy. An economy perse cannot reform the people. Therefore, any reform that ignores the aspirations of the people and neglect adequate funding of the technical education has failed even before it commences (Aluko, 2005). Therefore, without honest, sincere and planned reform, the positive impact of technical education can be undermined by deliberate externalities and unanticipated consequences. The objective of this paper is to firstly, examine the role of technical education in a reforming economy. Secondly, to understand several factors plugging

technical education in Nigeria. Thirdly, to specifically identify the consequences of the reform programme not only on the Technical/Polytechnic education but also on the State. Fourthly, to suggest how to rescue the polytechnic/technical education from the specter of irrelevance foisted upon it by the neo-liberal economic ideologues and assure it's future prospects in facilitating national growth and development. This paper is structured into six sections. Section one gives the introduction to this paper and section two defines what technical/polytechnic education and reform is. Section three examines the role of technical education in Nigeria and experience from other countries. Section four discusses the problems halting technical education and consequences of the reform programme on technical education. Section five suggests ways of repositioning technical education and making the reform programme positive to the economy. The Sixth section is the conclusion.

Conceptualization of Polytechnic/Technical Education

Economic Independence makes sense by being self-reliant to a large degree and minimizes depending upon other countries for any assistance. Self-reliance is derived principally from the possession of appropriate and adequate technology. This realization triggered the establishment of Polytechnics in Nigeria for the provision of technical education needed by the economy. The word 'Polytechnic' comes from the Greek words 'Polu' meaning 'many' and Technos' meaning 'of Arts'. This led to the definition of Polytechnics as the teaching of many arts and sciences. Polytechnics are unique institutions for higher learning where technological knowledge and skills are acquired for direct application to the solution of the problems of society (Awokoya, 1982:2). The goals and main objectives of Polytechnic education as teachings, research and public service similar to universities, but with emphasis on application and development (LCHEN, 1992). Known as either Polytechnics or colleges of technology, they are post-secondary institutions which provide a range of vocational and technical courses most of which lead to National Diploma (ND) and Higher National Diploma (HND) certificates.

These institutions also offer a variety of Diploma and Certificate programmes through full-time, sandwich and part-time modes of study. Polytechnics provide a complete range of course (except for medicine, dentistry and veterinary science) with a strong emphasis on work-related course leading to professional and vocational qualifications (Adeyeri, 1993) cited in Adigbepue and Idogho (2010). Polytechnic education can therefore, be seen as the formal training of person's to become technicians and knowledge relating to occupations in various sectors of economic and social life. Polytechnic education has peculiarities and such should be taken cognizance of in order to enhance its effective acquisition. This could be why Jean (2003:17) states that: Technical education designates the aspects of the technical process which in addition to a general instruction, imply the study closely related science and the acquisition of practical capacities, attitudes, understanding and knowledge related to trades of different varieties. This teaching can be part of a study programme in progress with the purpose of graduating to a higher and level of studies.

The above quotation brings at the claim that technical / polytechnic education is broad based and could be relevant to people by training them to be skilled in a way that enables them to be in governmental or be self-employed as well as teaching them the technological skills which would reform their national economy. On the whole, the benefits of technical education are limitless including the reducing of unemployment and enhancing nation's economic growth.

Conceptualization of Reform: Theoretical Issues

In many countries, reforms are practices that are adopted when the need arises in order to keep the whole society sustainable and at pace with some social and economic expectations. Reform is a deliberate rather than an accidental phenomenon in the life of a society, which follows a consistent monitoring of selected social and economic life indicators. It is all about deliberate change effort that involves bringing about new values and techniques on an existing system in a comprehensive and innovative manner (Simbine, 2007). Reforms therefore, implies the making of and sometimes policy change or institutions and their capacities in order for them to work better. The rationale for reform is usually to enhance efficiency, and effectiveness. The bottom line of which is improved economic goal, national development and overall welfare of the people. However, the present reform in Nigeria is traceable to western developed countries; its definition is dressed in capitalist ideology. In this respect, reform is interpreted to mean a broad concept of creating an enabling environment for effective markets (Ayodele, 2007:4). This definition is market oriented and liberally defined. Even though, a neo-capitalist approach find reform as deliberate inducement of transformation intended to produce structural and institutional change in the pattern of governance and administration that would jettison old pattern for a new method. It is deliberately designed and planned to engineer positive change in the society.

Within the contemporary context of governance, reforms often involve persuasion, arguments and sometimes threat of sanction. It involves restructuring, reconciling, re-orientation and re-organization (Caide, 1970, Roberts, 2005. Adegun and Okuwa, 2007) cited in Ayodele (2007). From the perspective of market and economic development, reform can be conceptualized as redrawing state-market boundaries and re-engineering or restructuring of governmental institutions within the levels of government. This means that, reform may be targeted at financial sector, infrastructural development, embrace privatization and commercialization and decentralization of governmental activities. Recently, the reform includes a broad array of structural institutional and attitudinal changes that emphasizes institution of poverty reduction, growth and stability. Thus, reforms are now directed at the economy, public service, security agencies, judiciary and other agencies of government, governmental policies are also to reflect the philosophy of reform programme. In Nigeria, it is important to ask, what has the government's reform programme done to technical education as an instrument for economic development? Most Nigerians would readily not support the ongoing reform packages to prevent the social and economical consequence that could result from their continuation.

The state has been shrinking and giving way to the private which is associated with the market. As neo-liberal economists and neo-conservative ideologues aggressively pushed for the execution of programmes for rolling back the state, as a central plank of the agenda for reform, Nigerian governments' neglect of education in general increased, and state funding for technical education in particular shrunk so substantially that most state polytechnics in Nigeria have become ghosts of their former selves in so far as roles and relevance are concerned (Jega, 2007). It is important to note that, the pressure for reform in Nigeria is not necessarily coming from within but in response to the western capitalist countries. The neo-liberals advocating proves guided by hidden invisible hand.

State intervention at the appropriate time and with appropriate determination is an indispensable precondition for successful economic reform and technological advancement. The Nigerian economy is an infant economy. It needs tendering, protection and guidance. It should not pretend as if it has arrived on world economy scene and is able to imitate and submit to the prescriptions of economic that took off three centuries ago. Some of the consequences of the ongoing neo-liberal economic reform according to Aluko (2005) are that more and more Nigerians have gradually grown to living outside the law. It should be noted that creating a new theory is not like destroying an old barn and developing a new one in its place, but rather like climbing a mountain and gaining new and wider vistas. In other words, we must look at our past, present and future as a continuum.

Experience from Other Countries

Studies of industrializing countries such as Indonesia and South Korea after the Second World War, shows that they were probably at comparable levels of economic development with Nigeria. According to Osagie (1994), these countries had experienced colonialism in one form or the other, but there the comparison stops. South Korea laid the foundation for the current economic success properly by investing heavily in education in the 1970s. Emphasis was placed on technological subjects and mathematics and reliance was placed on the traditional frugality of the people to generate the saving necessary to finance investment in key sectors (Osagie, 1994).

The process of economic development was further facilitated by massive infusion of Western capital factories into South Korea. The Strategy has been so successful that South Korea is now a major force in the world market for ships and iron and steel. Indonesia is, of all countries considered above, the closest to Nigeria in the areas of resource endowment, political experience and climate (Osagie, 1994). Yet, starting from the mid-1960s, she moved far ahead of Nigeria in spite of the fact both countries produce crude petroleum and have experienced significant periods of military rule. The reason for this is Indonesia's technology whose main features include: a strong foundation in technical education which provides fertile ground for utilization of technology for socio-economic development among other things. This brief review of the experiences of South Korea and Indonesia sets the stage for an examination of Nigeria's experience of the role of technical education in its economic reform programme.

Technical Education: the Nigerian Experience

There is a linkage between technology and growth which could be explained as changes in the quality of a society's processes and production of goods associated with economic growth. The precise character of the technological reform associated with growth still remains an issue where there is no education. Technical education is considered a positive force that enhances both social and economic development that benefits a whole population when it permits the productive use of all human resources. Access to and control of technical education is an important determinant to the role it will have, especially within the context of economic reform. Technological advancements and innovations have touched virtually all aspects of life. The Jet plane has effectively revolutionized transportation. Advances in telecommunications and electronics now facilitate instantaneous transmission of information from one part of the country to the other and have spurred an innumerable array of technological improvements in directly productive enterprises. An advance in technical education is quite impressive for the society.

Even when it's beyond their understanding, its practical effects control people's daily lives and work. New technological apparatus may enable the society to do, more efficiently, things that the people have been doing already by unscientific, hit-and-miss procedures. Technology has opened up new fields of work for Nigeria by making it possible to know and understand things that previously had not come within our environmental horizon. When the consequent increase in our knowledge revolutionizes our scope of operation, technology can be said to have added a new dimension to our world view. Tomorrow's world will demand highly qualified specialists and increasing flexible generalists (UNESCO, 2000) cited in Aigbepue and Idogho (2010). It is in realization of this role that Nigeria's National Policy and education in section 6, subsection 49 emphasized that technical knowledge and vocational skills necessary for agriculture, industrial, commercial and economic development through the provision of a well trained caliber of manpower to be produced by the polytechnics. Arguing in the same line, Decree 33 of 1989 enunciated the purpose of Polytechnic education.

Government pronouncements over the years on the need to promote Polytechnic education, coupled with the many summits on technical education convocation in Nigeria are clear indications that Nigeria values technical education as the main tool for technical advancement (Aigbepue and Idogho, 2010). Polytechnics have continued to supply industries and the civil service with skilled manpower who are able to increase, adapt and update available technologies to suit the reform programme, operate and maintain various plants and equipment for the production of goods and services. The Polytechnic sector has been able to record noteworthy achievement in the areas of agricultural equipment fabrication for agricultural and industrial purposes, energy conversion and application, industrial chemicals, arts and textile design etc. (Asuquo, 1992) Cited in Aigbepue and Idogho (2010:44). In spite of the above activities, Nigeria has not benefited as much as it should have from the roles of technical education. This situation is due to poor linkage between the reform programme

and Polytechnics. In most cases, the reform programme has resulted into many challenges facing technical education which shall be discussed in the next section.

Challenges of Technical Education

Education has an extraordinary potential for generating development. Nonetheless, today's education is propagating "mal-development" – the disintegration of the educational continuum and the absence of a social contract on education has at the heart of this contradiction. Higher education has the responsibility of creating the capacity for sustainable development and the democratization of knowledge, the key to genuine democracy. The distribution of knowledge is even more distorted than is the distribution of income, wealth and power. The main determinant of poverty today is neither lack of natural resources nor geographical marginality, but rather the lack of appropriate human capital to produce added value, make use of technology and attract investments (Gorastiga, 1999). The above statement underscores the crisis facing education in general and technical education in particular at the heart of creating the human capital for sustainable development in a reforming economy. The crisis that engulfed education in general and technical education in particular in Nigeria from the mid 1970s in many ways epitomized a much wider socio-economic and political crisis.

However, addressing the crisis in the 1980s was defined by emergent neo-liberal mind set. It was the neo-liberal ideology and mindset that shaped the debate and policy framework of the 'reform' of the education sector. The impact of the neo-liberal orthodoxy has impacted harshly on activities of the technical education reversing earlier achievements at endogeneity (Adesina, 2005:2). Despite all these reforms or transformations, the core role of the Polytechnics/Technical education in generating and dissemination of knowledge, producing middle-level manpower in the economy are often emphasized from time to time. As such, these reforms have also become a source of challenge in terms of quality education, which are the indices in measuring the place of Polytechnics/technical education in the economy. It is disheartening to observe that most of the state-owned polytechnics are just little above the secondary school level and are synonymous with structural decay occasioned by neglect and misplaced priority on the part of the government on one hand and society on the other.

Polytechnics are held in low esteem. It would for instance, be extremely difficult, if not impossible for an HND holder to be appointed Chief Executive of any government ministry. The situation has led to perennial controversy as to whether or not HND holders should be registered as engineers. In consequence, most of them spend time exploring avenues for obtaining registrable degrees in order to gain professional acceptability. This, of course means that the pursuit of symbolic credentials has seriously undermines single-minded commitment to professionalism (Umo, 1989:106) cited in Tamuno and Atanda (1989). Closely related to the above phenomenon is the issue of goal-distortion in the Polytechnics. Their main mission was to focus attention on the production of intermediate technical manpower for the economy. However, this goal has tended to be misplaced with the gradual

production of high-level manpower i.e. the HND attempt to turn them into degree awarding institutions on many occasions proves abortive. This disorientation of educational goals largely explains a paradoxical situation where acute intermediate technical manpower shortage now exists side by side with graduate unemployment in the Nigerian infant economy undergoing reform. Reform is shaped by two major compelling factors, one, the internal dynamics i.e. politics and economics mostly, and two external factors. These have in a way contributed to the success (if any) and failure of technological advancement and have remained interrelated. These factors have mutually combined effects on development programmes and future direction of Nigeria's technological development. External interference in domestic policies distorts the key sectors of the national economy and exert an unusually strong influence on the value orientation on the key decision making positions. These paradigms for reform as Ake pointed out was severely limited by the political interest that produced it and its interests were often in conflict with the quest for development (Ake, 2001:13).

This has created anarchy for technological breakthrough. Borrowed paradigm and orthodoxy theories serving as redeeming interventions constructed and unleashed on the economic space have created an advantage for delisting development to the benefit of the Western imperialist countries and to the upholding their hegemonic interest. Individuals and groups interested in technical education agree today that there is the problem of funding. Staff development has been relegated as funds are not available for teachers to progress on in-service training and further studies. The consequence is that teachers' knowledge and skills is not updated. Those who felt challenged by this situation left the teaching job to seek greener pasture in foreign countries or switched to lucrative industries within the country (Adeyemi, 2000) cited in Aigbepue and Idogho (2010:45). The problem of underfunding has also affected the various staff unions against government and proprietors of polytechnics, a situation that has led to many strike actions by the unions. Another aspect of facilities and the preponderance of unaccredited programs in the institutions (Aigbepue and Idogho, 2010).

Problem inherent in the Nigerian value system: Too much emphasis is attached to university certificates in Nigeria especially degree without considering whether the holder possesses knowledge and skill which the degree is supposed to confer (Aigbepue and Idogho, 2010). Employers of labour in both public and private organizations prefer to employ university degree holders. Polytechnic graduates are discriminated against and their career prospect, even when they are employed, is very uncertain unless such graduate return to the university to acquire degree or diploma. It was the neoliberal, conservative ideology and mindset that shaped the debate and policy framework of the "reform" of the higher education sector. Much of the neoliberal approach was shaped by an ideological posture that saw the academia as a domain of a leftist leisure class that needed market discipline (Adesina, 2005:1). The idea of education as a public good was replaced by a commodity-logic that insisted on applying the market as a resource-allocative mechanism to the sector. In what had become, the staple of orthodox neoliberal policy prescription, developing countries such as Nigeria were asked to increase

'user fees', reallocate public spending away from the higher education, polytechnics inclusive (World Bank, 1986:17), decentralize education offering through increased private provision of higher education and non-publicly funded community schools (World Bank, 1986:33-36) cited in Adesina (2005). The Nigerian state is also defunding technical/polytechnic education because the managers and operators of the state apparatus are willing captives of neoliberal forces. These forces, whose mission is to jettison technical/polytechnic education include notably, the World Bank and IMF. Ajayi (2001:3) cited in Iyayi (2003:13) has shown that this World Bank vision is based on the idea that it is by weakening and impoverishing the middle class, that the national economy can achieve the highest rate of growth. This heresy notwithstanding, the World Bank has moved decisively to jettison Polytechnic education in Nigeria. The starting point was the attack on the Nigerian state itself through the demand for the reduction in government, SAP and devaluation. The neoliberal forces / World Bank and IMF realized that in order to ensure success in taking over the Nigerian state, they first had to conquer Higher education in the country. It is thus the attack on state expenditure soon crystallized into an attack on technical/polytechnic education. If there is a lesson Nigeria can learn from successful producers of technology it is that sustainable development in this field rests on sustained support for technical education and development, and that much of the long-term support for training and scholarship comes from public funding.

Recommendations

1. Adequate funding of polytechnic education should be the priority of government so as to achieve technological breakthrough. This is because the future of the country depends on technical education.
2. The removal of salary disparities and other conditions of service for polytechnic graduates and their university counterparts in both public and private organizations should be backed by an Act of parliament. This will enable those discriminated against to enforce their rights in the court of law.
3. Stable policies that would promote technical education, given its role as the vehicle that could move the nation forward should be vigorously pursued by the government.
4. Reform in the context of prolong crisis requires much more than just the rebuilding of physical infrastructure in the technical education/polytechnic education sector, it requires the reconstitution of the ethos and ethics of scholarship, training and an internal commitment to these values.

Conclusion

Successful role of technical education require commitment not only to the teaching aspects of Polytechnics but the training activities. Both require commitment and political will. It must be emphasized that, what sustains a Polytechnic to play its role is not only commitment of those who fund it but those who operate within it. Fundamental to the ethics of technical education is the integrity of its operators; its training, evaluation and accreditation processes. Without a concerted effort to do that, without depending on the external bodies to

provide all that it needs, a polytechnic loses its place of pride in a reforming economy.

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