



IMPROVING TERTIARY EDUCATION SYSTEM IN NIGERIA FOR DEVELOPMENT: CHARTING A WAY FORWARD

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Abstract

Knowledge has always been at the core of any country's development process. More recently, the increased speed in the creation and dissemination of knowledge makes it an even more important ingredient in rapid economic development which is only achieved through a better tertiary education system. Nonetheless, the quality of most of Nigeria's tertiary institutions leaves much to be desired. This is a serious problem that hampers efforts to move toward a knowledge based economy. Hence, this paper aimed at finding out the importance of knowledge for a new Nigerian economy, the key problems of tertiary education and what can be done to bring about improvement in the standard of tertiary education. To achieve these objectives, the paper utilized secondary sources and made use of innovation culture theory to provide a theoretical orientation to this study. The result of the investigation reveals that knowledge is central to development. Finding also shows that the key problems of the Nigerian education system are access, quality and funding. However, in order to improve access to, quality and funding of tertiary education in Nigeria, government must harness the contribution of the private sector and put together a strategy for the use of ICT in the education sector. The paper conclude that Nigeria can build the foundations of a knowledge driven economy by generating a critical mass of educated people whose skills are continuously refined through lifelong learning and the progressive upgrade of the education system. The paper therefore recommends that the focus area of tertiary education should be providing good quality, well targeted, and timely education and skills.

Keywords: *improvement, tertiary education, knowledge economy, development and way forward*

Introduction

In today's knowledge based world, tertiary institutions play an increasingly central role in boosting productivity and economic growth. Developed countries of the world like China, Japan, Russia, and United States of America among others have achieved various breakthroughs due to their commitment to ensuring a functional educational system in their countries. Even countries like Singapore, Indonesia, India, among other upcoming countries that have achieved developmental breakthroughs have been attributed to their commitment to ensuring functional educational system in their states. Furthermore, countries like Japan, Israel, Korea, and China have achieved developmental breakthrough despite the fact that they have no any natural resource endowment (Asaju & Adagba, 2014). The secret of their breakthrough is their commitment to functional educational system. All of these nations have been able to overcome several developmental challenges i.e. poverty, unemployment, inequality, ignorance etc which are inimical to human existence and whose presence could lead to other social vices like, insecurity, crisis and conflicts, and war among other social ills.

However, countries which have invested substantially in knowledge factors over the past few decades, have experienced rapid and sustained growth and are currently some of the most dynamic and competitive countries in the world. This is due to the fact that knowledge is at the core of any country's development process. More recently, the increased speed in the creation and dissemination of knowledge makes it an even more important ingredient in rapid economic development which is only achieved through a better tertiary education system. For example, Korea's early growth has been a direct result of the country's ability to coordinate government policies and invest in education and innovation with market needs (World Bank, 2006). A good tertiary education system is therefore an absolute requisite for a functioning knowledge economy and development. Countries like Malaysia has planned to shape the transformation of the country into knowledge based economy by placing particular emphasis on the contribution of the university sector and recorded success.

In Nigeria, recent initiatives put in place such as the Nigerian universities network project which aims at connecting several federal and private

universities and developing shared infrastructural facilities for cooperation and cost reduction among other efforts represent a good start. Although Nigeria has made some improvements in its tertiary education level and quality in absolute terms, these have merely been sufficient to keep pace with other nations. Despite increasing amounts being pumped into education, outcomes have not improved and the federal ministry of education has described the situation as not only an educational crisis but a crisis for the nation. This is as a result of the enormous challenges faced by developing countries in developing their tertiary education systems from increasing access to and quality education, all the way to strengthening tertiary education to produce a critical mass capable of taking advantage of the technological innovation of this day and age.

There is a big mismatch between what is taught and the competencies needed in the workplace. This results in many school leavers and graduates being ill-prepared to compete in the job market and causes shortage of skills in some industries (World Bank, 2006). This is partly because strategies for skills development tend to be reactionary rather than proactive and do not target expected areas of growth. Regrettably, tertiary education in Nigeria has so miserably degenerated and assumed a near emergency situation. An analysis of the state of affair leaves a plethora of challenges, gaps and feeling of apathy, particularly against the public tertiary institutions. Evidently, tertiary education institutions' services delivery in the country is caught up in several contradictions, casting doubts about its access, equity and quality considerations (Akpa, 2013). Consequently, the quality of most of Nigeria's tertiary institutions leaves much to be desired. This is a serious problem that hampers efforts to move toward a knowledge based economy. This situation therefore represents a tremendous waste of young talents and a potential source of conflict. Hence, this paper aimed at finding out the importance of knowledge for a new Nigerian economy, the key problems facing tertiary education and to highlight policy prescriptions that will allow the country to take advantage of the opportunities available to bring about improvement in the standard of tertiary education in order to move toward knowledge based economy.

Conceptual Clarification of Knowledge Economy

The term knowledge economy was developed in the 1960s to describe a shift from traditional economies to ones where the production and use of knowledge

are paramount. According to Salmi (2009), a knowledge economy is one that creates, disseminates, and uses knowledge to its growth and development. The World Bank (2009) has defined knowledge economy as consisting of four pillars namely: business environment, education and skills, innovation system and information and communication infrastructure which if strengthened can result in growth and development. A successful knowledge economy is characterized by close links between academic science and industrial technology, greater importance placed on innovation for economic growth and competitiveness, increased significance of education and lifelong learning, and greater investment in intangibles such as Research and Development, software, and education (World Bank, 2005). Knowledge economy is therefore a system of consumption and production that is based on intellectual capital. It refers to the ability to capitalize on scientific discoveries and basic and applied research. It has come to represent a large component of all economic activity in most developed countries. It is used here to mean an economy which growth is dependent on the quantity, quality and accessibility of the information available rather than the means of production. Knowledge is used to create goods and services and jobs require specialized skills. Tertiary institutions and companies engaging in research and development are therefore important foundations of this system.

Theoretical Framework

The innovation culture theory shall be adopted for the study. The theory draws inspiration from the work of Utz (2006) in his work titled "Fostering Innovation, Productivity and Technological Change". The theory has been expounded and further developed by scholars like Radwan & Pellegrini (2013). The theory assumed that investment in innovation over efficiency can spur growth and development in future. Therefore, developing countries must build a technical culture and a system of incentives that support the adoption and subsequently the adaptation of existing (often foreign) technologies (Utz, 2006). Utz (2006) broke down the innovation process into three key steps which generally follow the process of development of the country concerned;

- i. Local adoption of existing technologies
- ii. Adaptation of existing technologies to the local context and their use for the development of competitive industries

iii. Development of new technologies in the country

The first step towards adopting an innovation culture is to adopt existing technologies and adapt them to the local situations. Nigeria has the potential to absorb existing technologies and production systems, especially in the service industries. Nigeria's production systems are far from efficient and there are great potential gains to be achieved simply by moving towards more modern and efficient production techniques. As Utz (2006) asserts, innovation in the context of developing countries consists of the design, development and diffusion of a technology or a practice which is new for the society concerned. According to Porter (1990), most developing countries with Nigeria inclusive are at the factor driven stage of development. At this stage of development, developing countries tend to rely mainly on things such as natural resources and unskilled labour, while seeking to move to the investment driven stage where the transfer of technology and investment in human and physical capital allows them to prepare the ground for the innovation stage which is the knowledge driven economy. Hence, a forward looking innovation culture that supports qualitative knowledge interaction among various tertiary institutions is critical for building a knowledge economy. In this context, innovation as a concept must be intended not just as the domestic development of cutting edge scientific discoveries, but also as the adaptation and use of existing knowledge in the local context (Radwan & Pellegrini, 2013).

The theory also assumed that the success of any economy must follow the pattern of first moving to existing best practices and then attempting to develop new technologies. Nigeria is in a good position to start developing original technology and know-how in the near future. However, if Nigeria is to achieve its vision to become one of the top 20 economies, it must make innovation the centre of its development strategy going forward. But much can be done to improve the innovation culture across Nigerian society. This can be started by devoting adequate resources to encourage innovation. Government can boost support to research and development by increasing funding to the significant number of underfunded Nigerian research institutions and tertiary institutions. This will be achieved in tandem with a restructuring of these institutions to encourage partnerships with the private sector and additional fund raising from remunerated activities.

However, Nigeria can focus on fostering its innovation culture by adoption and adaptation to the local context of existing technologies. Nigeria can go a long way to foster an innovation culture by refocusing priorities and carefully choosing a menu of actors that foster knowledge, technology adoption and adaptation would help the country target the key building blocks for the development of a solid knowledge economy which would later entail the local production of new ideas. Nigeria already has what it takes to create an innovation culture. It has a national strategy on science and technology that could be further revised to provide a sound framework for innovation in the country. By raising the standard of tertiary education system, Nigeria's innovation culture could receive a boost from the more fluid circulation of tools and ideas. This can be implemented by developing more high quality teaching universities domestically to educate Nigerian students thereby reducing the need to finance education abroad, and even attract more foreign students to the country. Other countries are benefiting from Nigerian scholars who enroll in those countries' universities in order to receive an education that focuses on soft as well as hard skills. Nigeria can equally make tremendous progress in building an innovation culture via introducing modern and efficient practices in tertiary education system. Innovative methods could be developed and used to deliver better tertiary education such as training through cable television, satellite television and online training. However, the curriculum needs to focus more on problem solving and practical skills.

Investment in developing a research base geared to the process of imitation and assimilation is needed. This will help increase the value added of experts and begin the process of domestic innovation. Tertiary institutions can move quickly to address the rot in tertiary education by bringing in international experience and funding where ever possible. Research as a discipline can be given greater funding within universities. This is aimed at building up a critical mass of educational service providers to cater for the rising demand in the country for quality tertiary education at all levels from undergraduate to postgraduate levels.

The first step in becoming a full-fledged knowledge economy is therefore to use and apply global knowledge to local processes to improve development outcomes. The implementation of international best practices will help to spur Nigeria's productivity and competitiveness. By this, Nigeria's firms can reap

huge benefits simply by adopting well known managerial techniques and practices. Nigeria must differentiate among knowledge that is new to the world, new to an industry and new to a firm. Applying existing knowledge that is new to a firm or new to an industry in the country will reap huge benefits (Salmi, 2009).

The innovation culture theoretical premise is therefore relevant for the analysis of issues under investigation. This is because its premises have been able to identify the processes tertiary institution should follow to bring about improvement in the sector's standard. According to this theory, a country like Nigeria desiring to realize economic growth needs to formulate a robust national strategy aimed at enhancing the application and assimilation of global knowledge, industrial productivity and international competitiveness, with the goal of achieving faster growth and reducing poverty. This should be the beginning of a longer journey that will make Nigeria a full-fledged knowledge economy in the future. Adopting existing technologies widely available in developed countries can dramatically boost productivity and economic growth. Furthermore, the ability of the theory to identify the importance of knowledge to a growing economy is an added asset to the study and underscores its choice. The theory stress that innovation can supports the creation of a knowledge economy which improves a country's competitiveness and put in a place a virtuous circle whereby improved competitiveness in turn fosters more creativity. Besides, innovation is useful in helping Nigeria's tertiary institutions to learn from the various international models that have been successful elsewhere and avoid the mistakes that other countries have made so that Nigeria can begin to establish its own strategies by embarking on the knowledge economy revolution. Creation of innovation culture can support or hinder the interaction between global and local sources of knowledge and the assimilation of the growing stock of global knowledge. This aids technological catch up between lagging nations and more advanced economies. Nigeria therefore needs to begin fostering domestic innovation in order to remain competitive in the knowledge economy. There is the need to recognize to reform Nigeria's tertiary institutions to stimulate development of domestic economy.

Methodology

This paper is a theoretical paper which utilizes secondary sources of data such as journal articles, books, conference papers and reports from the media as a basis for analysis against the existing literature and experiences. Therefore, the

paper is basically descriptive based on observation and data taken from the above mentioned sources.

The Importance of Knowledge for a New Nigerian Economy

The invaluable roles and contributions of tertiary education in the development of an individual and the society cannot be over emphasized. Many countries including Nigeria, take education as an instrument for the promotion of national development as well as effecting desirable social change (NPE, 2004). Education is the bedrock of the socio- economic and political development of any nation. Asaju & Adagba's (2014) conceptualization of education as a process, activity and outcome of skill, knowledge acquisition which makes the citizen a better and more productive person to himself and to the society at large is a confirmation that a high qualitative knowledge base is essential to drive economic growth and development. However, most of the development in sciences, technology and development in general are possible because of the learning and research in the tertiary institutions (Alubo, 2013).

Knowledge through adoption and adaptation felicitates productivity and growth and also improve living standards substantially. For instance, Korea's sustained rapid growth rate is due to its strategic use of knowledge for development. Korea's growth is significantly credited to its ability to use knowledge effectively in all sectors of the economy. Although, Korea had not conceived an explicit knowledge economy development strategy, its commitment to strengthening each pillar through a focus on coordinating knowledge according to industrial needs led the country to rapid growth in the years following the wars (Radwan & Pellegrini, 2013). Salmi (2009) avouches that Economic growth and global competitiveness are increasingly driven by knowledge. Thus, investing in the knowledge economy means investing in strategies that will bring about significant changes in the way a country can grow because the application of knowledge brings about more efficient ways of producing and delivering goods and services at lower costs to a greater number of people (Salmi, 2009).

World Bank (2005) maintains that the importance of knowledge for an economy should not be seen as limited to high technical industries and cutting edge research. Instead, how well economies use appropriate knowledge to improve their productivity and increase their welfare is key. Education and skills levels

become important sources of growth and competitiveness in the global economy. Coupled with the use of existing knowledge in a variety of circumstances, not just in leading edge scientific discoveries, they become essential in both “doing things better” and “doing better things”. The dynamic process of knowledge and wealth creation raises tremendous possibilities for enhancing productivity and competitiveness (World Bank, 2005).

Highly skilled and flexible human capital is essential to compete effectively in today’s world and is a key building block of a knowledge based economy. Such human capital enables a nation to adopt, adapt, use and produce knowledge, and becomes central in its development. All levels of education have their roles to play. For example, tertiary education particularly in the sciences teaches critical thinking and the ability to solve problems and make use of new technologies. This is a necessary, albeit not sufficient, condition for enhancing productivity and promoting competitiveness.

Knowledge has emerged as a critical determinant of competitiveness in today’s globalized economy. Providing a quality tertiary education is the base from which a country can build an economy capable of competing in the 21st century and meeting the biggest development challenges. Better knowledge will help Nigeria improve its non oil growth prospects, reduce poverty and increase shared prosperity. Besides, a better knowledge will allow Nigerian youth to take advantage of economic opportunities to become active players in their own economy. Consequently, Nigeria’s ability to create a demand driven education system that focuses on lifelong learning will determine the country’s capacity to embrace the benefits of the knowledge economy. Thus wise, focusing on the improvement of tertiary education system can effectively support the country’s new growth strategy which places economic growth at the heart of Nigeria’s development. With the help of a sound knowledge, brilliant ideas are turned into a finished product.

Problems of Tertiary Institutions

Quality: Quality is essential. Poor quality tertiary educational program do not equip people with the necessary skills to compete effectively in today’s globalized economy, where advanced technical knowledge is the bread and butter of many industries. At present, the country’s education system deters innovation. Students are generally not encouraged to conduct or promote

research or to be inquisitive. Tertiary education institutions have few formal linkages to industry, and as a result tend to continue teaching outdated materials and producing graduates who are ill-equipped for the working environment which can spur development. Nigeria has a practical problem on its hands; the tertiary education system is too academic and does not provide for other skills which youths need to live fruitful and fulfilling lives. Nigeria's tertiary institutions now produce graduates who are currently unqualified to meet the needs of the ambitious science and technology development program. Furthermore, some tertiary educational institutions have become havens for cultist, gangs, and examination malpractices, certificate racketeering, 419, commercial sex work among others. The established values which set tertiary institutions apart from other places where corruption rules are now under threats (Alubo, 2013). Consequently, Nigeria has experienced a major brain drain with a large number of educated Nigerians going abroad to study and the majority having not yet returned to Nigeria.

What is more, there are challenges in infrastructure. Students sit in overcrowded lecture rooms that lack electricity. They are taught with obsolete methods and old books and graduate later than expected due to the strikes and administrative hiccups that affect the system. Reports of corrupt teachers, who demand bribes to pass students or do not show up in classrooms, unfortunately are not frequent. Now students pay their way through tertiary institutions and pay for good grades (Walker, 2008). Teacher-centered, one way teaching, rote memorization, lack of diversity of educational programs, and a preoccupation with preparing for exams have all left little room to nurture creativity and initiative. School and university programs are often obsolete and make use of outdated books, equipment, and practices which encourage rote learning and theoretical notions rather than hands on learning and problem solving techniques (Odia & Omofonmwan, 2007). Corroborating the above view, Alubo (2013) bemoans the state of infrastructure in tertiary institutions:

There are challenges of functional and adequate infrastructure to enhance conducive learning and teaching, library holdings and whether such holdings are up to date, adequacy of teachers, properly trained in needed specialties, extent to which institutions conform with the guidelines for regulatory bodies, extent to which tertiary institutions are connected with the wider national and

global universe. These challenges are daunting and thus, constitute a threat to the quality of tertiary institutions' products (Alubo, 2013:46).

Radwan & Pellegrini (2013) added that, ICT and other modern learning tools are not widespread in Nigerian tertiary institutions, reflecting the poor infrastructural levels of the country. In such conditions, students do not benefit from the knowledge sharing properties that the World Wide Web can offer their peers in other countries. A primary tool for knowledge sharing, dissemination and adoption is missing and basic IT skills necessary in today's job market are not acquired. This also prevents Nigeria from more aggressively pursuing important opportunities such as the global off shoring business. Undeniably, given the poor state of infrastructure and lack of funding, it is hard for Nigeria to follow the example of countries such as Singapore with its master plan for ICT in education, a plan aimed at incorporating ICT in all school curricula. A first step in this direction could be for Nigeria to put together a strategy for the use of ICT in the education sector. However, under resourced and overloaded curricula and lack of coordination between national education policies and activities that actually receive funding are common in many disciplines, including science and ICT. Aside, student admission systems in tertiary institutions in Nigeria are not entirely transparent as merit based (Odia & Omofonmwan, 2007).

Access: Access to tertiary education is equally essential to build a stock of highly skilled people who can turn Nigeria into a knowledge economy. But then, access to tertiary education in Nigeria is limited. Moreover, lack of access to tertiary education varies widely among regions and has strong gender bias. The group facing the lowest level of access is young girls in the northern region, where cultural practices, poor employment prospects, and the cost of schooling have left many at home doing housework or getting married very early. Generally, gender bias remains a problem for the country as a whole, with males' greatly outstanding females in science and technical colleges by 81%, polytechnic by 60%, and universities by 73% (World Bank and International Finance Corporation, 2009). Although enrollment has been improving recently, much still needs to be done to reach the MDG goal of universal basic education by 2015. Despite the large increase in tertiary enrollment rates, Nigeria is still behind in the process of building a critical mass of highly educated people (WBIFC, 2009).

Moreover, corruption within the education system substantially lowers access. If the practice of paying bribes to lecturers who try to supplement their meager salaries to pass exams is also counted, the cost of education increases substantially thereby lowering access (Odia & Omofonmwan, 2007). This has tremendous implications for building up the highly educated workforce needed for Nigeria to become a knowledge driven economy. Corruption therefore limits the goals of an institution thereby resulting to wastages. Additionally, students are made to suffer undue amount of exploitation by school heads of both private and public schools in the name of enrolment fees.

Funding: Funding for the upgrade of tertiary education system is another key challenge for Nigeria. At present, funding from government is not performance based and does not leverage partnerships with the private sector. Private funding in education concentrates mainly in private universities, where enrollment in sciences and technology subjects is low (WBIFC, 2009). Moreover, government funding for university research is too low to attract industry partners into Research and Development agreements, unlike other more advanced knowledge economies. By losing out on these highly beneficial partnerships, Nigeria is constraining its potential in breaking into lucrative, job-creating industries (Wijesinha, 2008). Lack of funding deters improvements in standards and impairs the capacity of the education system to be a catalyst for innovation in the country.

Funding remains low in absolute terms and is generally input based (e.g. focused on providing classroom and text books) rather than related to performance and output (e.g. reading and comprehension levels). There is little incentive for teachers to perform and to partner with the private sector (World Bank, 2006). As a result, Nigeria's tertiary education outcomes still lag behind those of India, South Africa, Egypt, China and Mexico. Nigeria seems to fare substantially worse in most education indicators than African peers like Ghana, Egypt and South Africa (World Bank, 2006). Poor funding remains a major challenge that has continued to blight the development of tertiary education in Nigeria (Ayeni, 2007). Nwachuku (2005) lamented that due to the present level of underfunding by the state, the public sector of education has witnessed stagnation and decay. This affects implementation of a well-designed curriculum. Aside, this mirrored Nigeria as a country without an ambitious educational curriculum, capable of arming its teeming young population for the

future of the world (Adedokun, 2018). Funding challenges of the tertiary institutions have particularly remained critical for example, the Federal Government lamented that in 2004, only 255 of the universities funding requests were met by the Federal Government (Federal Ministry of Education, 2009).

Charting a Way Forward for the Improvement in the Standard of Tertiary Education

Tertiary education is the most potent tool for effecting individual emancipation, growth and development as well as national transformation. Nonetheless, tertiary education system in Nigeria is facing major challenges in ensuring that standards are maintained and these are comparable locally, nationally and globally. Notwithstanding, for tertiary education system to remain attuned to cohere with the world of work, such that those who should be in school are not merely schooled but functionally educated to be self reliant and productive and sought after by employers of labour far and above their peers, mitigating the challenges and filling the gaps through a robust turn around strategies has become an urgent imperative. In fact, Nigeria needs to improve tertiary education system in order to set the country on the path of economic and human development.

However, the best way to maintain a high quality tertiary education system which is the driving force for development in Nigeria is to encourage critical thinking and problem solving as the by words of education. It is increasingly important to improve students' competencies in critical thinking and problem solving, and to promote lifelong learning through a broader interdisciplinary approach. The training provided in Nigerian tertiary institutions is often theoretical or obsolete and does not equip graduates with the necessary tools to positively impact the productivity or development of their country. There is therefore a strong need to improve the quality of education and ensure that applicable practical know-how is transferred. Graduates will then have to be provided with appealing opportunities to avoid brain drain.

Nigerian government should learn from Singapore to be effective in incorporating IT into tertiary institutions through a uniform teacher training system offered by the ministry of education to produce teachers effective in preparing students for knowledge for development. New methods of training,

new learning materials and better trained lecturers should be provided in tertiary institutions. The quality and relevance of education can only be improved by ensuring that all lecturers are qualified for their jobs and by retraining those who are not. These objectives will only be accomplished by granting greater autonomy to the tertiary institutions and giving them discretionary powers in hiring teaching staff, managing academic affairs and setting students' admission quotas.

Nigeria could also take inspiration from international experience in monitoring the quality of teaching and learning. For instance, Singapore's quality assurance framework for universities has been successful in tracking quality enhancement. Government should devolve greater operational and financial autonomy to tertiary institutions and put in place a quality assurance framework for tertiary institutions to track quality enhancement. Thusly, putting in place a stronger national qualification accreditation system would help ensure graduates of any tertiary institution possess the skills that their qualifications formally indicate they have. The quality of university degrees is often well below international standards, despite Nigeria's tertiary level accreditation system. The National Universities Commission (NUC) accreditation system should strengthen its enforcement of accreditation standards and to sanction institutions that could not meet the standard. Nigeria could also strengthen regional initiatives to monitor tertiary educational quality.

Nigeria government should be able to supply value added inputs to tertiary education, for example, high levels of internet access in tertiary institutions and high quality science and math education. Nigeria needs to strengthen the quality of teaching in mathematics and sciences if it is to become a full-fledged knowledge economy. A sizeable cohort of people educated in mathematics and sciences helps a country internalize technology and innovation developed abroad and one day makes the jump and develops new ones locally (Mailafia, 2008). Tertiary institutions should therefore put emphasis on science as a fundamental part of any Nigerian child's education and on some key areas that the country could focus on such as ICT and biotechnological research.

Government can strive to track and attract back its expatriates who have graduated from top international universities. Many Nigerians have started to return and government can continue to ensure that they are empowered to play a positive role in the nations' economic development. The Diaspora could become the driving force behind Nigeria's knowledge economy efforts. It is

calculated that more than 15million Nigerians live outside of the country (Nworah, 2005). Among them are accomplished physicians, scientist, businessmen, economist, writers and artist. All of them and particularly those in science and business have a tremendous amount of know-how to offer. By transferring the practical knowledge of production system, they could foster innovation in their home land to a great extent. In this effort, they would possess a comparative advantage that stems from their unique understanding of local context of cultural and business practices and of specific constraints in their way. Aside, they could facilitate the implementation of the adopt-and-adapt strategy as the basis of Nigeria's knowledge economy. Government should also raise the standard in local universities and research centers to attract back the Diaspora from foreign centers of learning and from private companies willing to set up shops in Nigeria to exploit the newly created pool of talent. Nigeria government can also make it easier for foreigners to live and work in Nigerian tertiary institutions to bring much needed management and technical talent in the tertiary education system in Nigerian.

More so, government should give financial support to talented undergraduate science scholars to help fund their educations through the doctoral level so as to ensure a steady supply of local researcher scientists to fuel growth and development in the country. A performance based incentive system could help improve the quality of education. Currently, the Nigerian tertiary education system does not adequately reward excellence, funding is not a performance based and this does not encourage a drive towards results in terms of teaching excellence and research output. On the contrary, it discourages the most motivated students or researchers who every year leaves Nigerian educational institutions for foreign ones. Besides, by tapping into the experiences of other countries as well as the lessons learned from in-country projects, some pilot schemes could be devised to introduce performance based incentives system in education. Relatedly, more attractive returns to education could prompt more people to enter the tertiary education system. According to World Bank (2006), an estimated 50% to 60% of graduates from tertiary institutions cannot find an adequate job upon completion of their studies, so it is not surprising that people lack incentives to acquire additional education. This has a tremendous impact on Nigeria's current and future development prospects and could effectively prevent the country from building the critical mass of human resources needed for Nigeria to become a knowledge driven economy. One of the corollaries of better returns to education is an increase in people's willingness to pay higher fees to attend good schools. This would results in higher private funding for education, generating a virtuous circle of opportunities for the sector.

Nigeria needs to strengthen collaboration between universities and the private sector. For instance, strong linkages should exist among the private sector, tertiary education institutions and research bodies which also have close ties with leading foreign universities and research institutes. Such linkages can support knowledge dissemination and transfer to the real sector of the economy. Through partnership between tertiary institutions and the private sector, a handful of centers of excellence could emerge and provide the highly skilled workforce that could attract foreign and domestic companies into modern business lines. This could then put in motion a virtuous circle with the diffusion of knowledge to other areas of the economy and the progressive strengthening of the whole education. Government should heavily encourage research within universities through a variety of mechanisms. There should be massive recruitment of research faculty from abroad and greater research collaboration with reputable universities outside Nigeria. In an effort to transform the country into a regional educational hub, government should allocate large amount of resources to R&D efforts in the tertiary educational sector to enhance its research and innovation capacity. There is a need to resolve the lack of coordination and dialogue among existing research institutions, universities and government ministries. This would serve to target interventions to areas of growing market demand (Billetteft, Powell & Treichel, (2008). Research institutions currently seem to set their work target by totally disregarding market needs, thus, operating in a vacuum without interaction with industries. A study by the industrial training fund and the Nigeria employers' consultative association (2007) finds that staff members do not possess the required competencies particularly ICT and communication skills in 265 of the interviewed organizations.

Government should support the private sector's involvement in the education sector, particularly in funding education. This will encourage competition among providers and supply the government with excess funding to be distributed towards higher education which will be increasingly important in creating skilled workers needed in the emerging services industry. Developing strong synergies between the public and private sectors could deliver better educational services. Given the mismatch among the quality of education, the relevance of research work and the needs of the economy, better coordination through intense dialogue and collaboration with the private sector are key to producing a workforce that possess relevant skills for local economy and is flexible enough to take advantage of the changing opportunities of today's global economy. Industrial led skills development initiatives through some private sector champions could pave the way to apply this approach more broadly to the while education system. The private sector could help by

providing information on current technology trends and skills requirement, by offering job placement opportunities for students and by participating in public-private partnerships for training. On the other hand, stronger synergies would benefit the private sector in terms of availability of better training course for employees, given the poor quality of some of those offered at present (Iarossi, 2008).

Nigeria government should invest in knowledge inputs that strengthen all relevant sectors of the economy. More resources should be channeled to specific areas of study seen to be closely linked to the government's blueprint of ensuring economic growth and development such as life sciences, entrepreneurial studies, information technology, communication and management. Government should therefore invest more resources and flexibility to adjust to the needs of the rapidly changing economy and society. It is paramount that Nigeria focuses on education and invests in the sector. This will help it build the foundations of a strong and diversified economy that could better cope with potential adverse terms of trade and other challenges in the future. Nevertheless, Radwan & Pellegrini (2010) argue that Nigeria will be unable to reap the full benefits of its investment in expanding education unless its broaden institutional and incentive regimes, stimulates the most effective use of resources in these areas, permit their deployment to the most productive users, and allow entrepreneurial activity to flourish to contribute to Nigeria's growth and overall development. Corroborating the above argument, Akpa (2013) asserts that increased government budgetary provisions alone would not solve the problem. But first and foremost, management of tertiary institutions must be appropriate, effective and efficient. They should drive the institutions for optimal performance so as to attain the corporate educational goal. In addition, relevant stakeholders should be engaged on how to restore the glory of tertiary education system in Nigeria. Akpa (2013) further charged the councils and boards of tertiary education institutions to give proper account of themselves, striving to improve enrollment, teacher quality and quantity, teaching and learning processes, improve facilities and equipment, and more effective and efficient management at the institutional levels.

According to Dahlman (2008), Nigeria must improve access to, quality and relevance of, and funding for education in order to produce the flexible labour force that is required to project them into the realm of knowledge economy. Nigeria could devote more efforts to creating stronger research communities on a small scale, encouraging researchers to interact more intensively with one another and with peers abroad, and encourage prospects for innovation and commercialization by building links with the private sector.

Given the already large differentials in funding and therefore access to and quality of education, in different Nigerian states, it is paramount that the government addresses this from the very start to avoid exacerbating inequalities and encouraging excessive migration to the few better served areas that are already under population pressure such as Lagos and Kano among others.

There should be a scope for increasing funding at all educational levels and introducing modern tools and technique such as computer and the internet throughout the tertiary education system. Internet access in Nigeria's schools remains at half the level of comparator countries like Ghana and Egypt. Tertiary education should be given a high priority in order to develop the human skills necessary to facilitate the country's emerging research and development efforts. Education should be highly subsidized, and to constitute the largest government expenditure item. The tertiary education should be transformed into one that is industrially targeted, able to provide the higher technical skills and worker training needed for high technology production. The tertiary education system should be improved to ensure quality and relevance of curricula, ensuring the provision of skilled personnel at all levels of production. Thus, vocational training should be used to its potential to provide Nigerian firms with a more flexible workforce.

Government should exercise control over curriculum content and quality and ensured its relevance to the activities being produced. Developing strong synergies between the public and private sectors could deliver better educational services in the realms of training and curriculum development.

Conclusion

The quality of Nigerian graduates from tertiary institutions in the country is generally low and unsatisfactory and thus, cannot support development. However, the problem stems from the Nigeria's tertiary education system, which emphasizes theoretical and exam-oriented learning at the expense of lifelong learning and problem solving skills. This is further worsened by the lack of investment in personnel training in the enterprise sector which limits the upgrading of knowledge by technical personnel. In spite of this, tertiary institutions can be repositioned for optimal effectiveness, efficiency and productivity in ways that graduate are competitive locally, nationally and globally, and above all add value to give graduates of Nigeria's tertiary institutions an edge above their peers. This can be done by closely studying the development path of the international giants like India, China, Korea, and Singapore and by identifying areas in which it needs to focus to become developed and competitive through a better quality education system that is closely tied to the development needs. Nigeria's tertiary institutions can also

learn from some of their mistakes. Thence, Nigeria can build the foundations of a knowledge driven economy by generating a critical mass of educated people whose skills are continuously refined through lifelong learning and the progressive upgrade of the education system. The quality and relevance of education, particularly of vocational training and expansion of access to tertiary institutions need to be improved so as to spur development in Nigeria. Government can therefore heavily invest in creating an environment that is both supportive and conducive to learning in all tertiary institutions in order to attract and retain creative talent whose contribution to the economy will fuel growth and development.

Recommendations

The paper therefore recommends the following:

The tertiary education institutions should put more emphasis on general competencies that promotes adaptability and lifelong learning, and less on job specific skills. Besides, tertiary education system should be nurtured and expanded according to the manpower needs of the economy.

The government should focus on ensuring that increased inputs in tertiary education system and vocational training systems are matched by improved outcomes. The focus area of tertiary education should be providing good quality, well targeted, and timely education and skills.

To take advantage of the opportunities offered by the knowledge economy, government should reform the tertiary education system by introducing a transparent admission system as well as merit based graduation.

In order to attract back Nigerian students from abroad and bring more foreign students to Nigerian universities, the government should update Nigerian tertiary education system with a more modern curriculum that focuses on soft skills that will be significant for the development.

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