The Legends

Reformers and Revivalists of Excellence in Higher Education in Nigeria

Olusola O. Isola

CODESRIA

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Council for the Development of Social Science Research in Africa
DAKAR

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Introduction

Before and shortly after Nigeria's political independence, the higher education sector, which was patterned after the British Commonwealth model, competed favourably with some of the best higher institutions and even surpassed some in many Commonwealth countries in terms of quality and output. Scholars were recruited globally into Nigerian higher institutions and the system was exposed to global best practices whereby indigenous scholars interacted and competed with the global bests, winning awards in virtually every field of academia, including a Nobel Prize for Literature and many prizes in the sciences. Medical education in Nigeria was highly valued to the extent that Nigerian universities became reference points in tropical medicine, as in other scientific fields and in the humanities. That feat was sustained for about two decades after independence. These competitive trends existed because of the value Nigeria placed on education, which dictated that a meaningful proportion of the national budget was devoted to sustaining the standards of the existing facilities in educational institutions and in building new institutions to match the growing younger population while serving the older generation of academics.

However, after two decades, the education sector in Nigeria descended into an abyss and was on the verge of collapsing. The descent started in the 1980s and cumulatively worsened over about another two decades. The degeneration began at the peak of the military era when the sector was neglected by various military governments who saw the intellectual community as a threat to the perpetration of the military's power. The military administrations decided that the best option was to strangulate education by withholding from it the resources needed to nourish it, thus leading to a brain drain (the emigration of intellectuals) and other problems that led to the near collapse of the quality of education and skilled labour within the country.

The real degeneration started when the military diverted national wealth from education to less meaningful national priorities, obviously because politics and the economy were being driven by an ill-prepared and corrupt military cabal who equated public administration with military service. Even greater degeneration ensued when the International Monetary Fund (IMF) granted a loan to the military administration in the late 1980s. Part of the conditions for the loan was the drastic reduction of expenditure on education and other social welfare sectors that were to have assured the prosperity of the future generations of the country. The consequent budgetary reduction led to the gradual deterioration of facilities in educational institutions across Nigeria, the falling standard of instruction and the massive migration of intellectuals away from Nigeria, while global intellectuals started staying away from Nigerian educational institutions due to poor incentives. The uncontrolled and increasing population in the country subsequently led to the establishment of more tertiary educational institutions without the requisite financial investment by the state, leading to an inability to attract scholars and qualified administrative staff to run the tertiary institutions.

Meanwhile, the decline of the educational sector affected other sectors of the country, which contributed to stunted national growth and development. Poorly trained staff, a depressed economy and inadequate avenues to engage the products of an expanded tertiary education sector in a monoproduct economy contributed to socioeconomic degeneration. Since the industrial sector equally collapsed, there were limited openings for ill-trained graduates from higher educational institutions, leading to massive unemployment. Criminality has been on the rise as a result of the youth bulge and subsequent governments seem to have been confused about the right steps to take to address the depressing social situation. However, it seems that the present Buhari government (2015–present) has realised the need to address the deficiencies in the higher education sector in order to remedy the country's collapsing social and economic situation. Efforts to revamp the sector commenced by attracting private investors into the sector and increasing public resource allocation.

Internally, the higher education sector in Nigeria has been bedeviled by a number of problems that have prevented it from really taking off to compete once again at a global level because of the trauma it has experienced. The deteriorating infrastructure for training and for the provision of municipal services in the various campuses across the country appears to be chief among the causal factors. Many of the higher institutions are still basking in their past glory and have not really recovered from infrastructural collapse. Hundreds of students are cramped into classrooms and hostel facilities that were erected when the population of the

institutions was about one-tenth of their present size. Laboratory equipment and facilities are almost non-existent in some colleges and, where they are available, they are mostly outdated. The motivation for innovation is therefore minimal among members of faculty and research students, who often operate in an environment of deprivation with little access to resources. As earlier pointed out, most of the brilliant minds have drifted to other parts of the world where there are incentives and resources to be productive. Happily, some of them are looking back to assist in revamping some of the moribund colleges through alumni activities.

Many of the existing curricula that drive training and research activities are outdated in most of the tertiary institutions. Where ordinarily such curricula ought to have been reviewed periodically, the lack of resources to drive such reviews has often prevented these efforts. Hence, graduates of higher institutions often do not meet the requirements of industry and most have to be retrained to be useful. This implies that fresh investment often has to be made to retrain the skilled labour that industry requires, leading to a loss of confidence in graduates of the existing tertiary institutions.

Corruption and moral decadence have become pervasive in most of the higher educational institutions. Many of the campuses have become the den of cultists who engage in violent encounters that lead to the loss of lives of mostly innocent students. Rapists and sexual perverts now rove the campuses, while armed robbers and kidnappers constantly loot hostel accommodation, staff quarters and harass students and faculty members. All these factors have prevented meaningful innovation and creativity in institutions that should be at the forefront of these endeavours.

The problem of poor interface and gaps between the ivory towers and industry is still great. While industry often complains that the tertiary sector is not meeting its needs and requirements for growth and development in terms of technological innovation and the production of skilled labour, the tertiary sector claims to produce prototypes of innovative technologies that are not patronised or bought into by industry. Obviously, there is a yawning gap between the two sectors, which can only be mediated by appropriate government policies and development plans that bring together industry and the research institutions in a mutual beneficial relationship that encourages both sides to engage with each other.

Incessant industrial action by staff unions in higher institutions is another problem. Conflicts over salaries, allowances and training infrastructural matters are often the reasons for the sometimes protracted strikes, which necessitate the prolonged closure of tertiary institutions and the delay in graduating students in public institutions. These issues affects not only students but also parents, and impacts on national planning. Sometimes, it disrupts the career trajectories of

staff members in institutions and precludes them from planning their progression. In spite of commitments offered by government to sustain favourable working conditions for staff in the higher education sector, it appears that a shortage of resources and a lack of commitment by government towards meeting its promises have contributed to the unstable industrial relationship especially in government-run tertiary institutions.

Even though the staff of private institutions are equally dissatisfied with their conditions of service, the mechanisms to exhibit their grievances are often limited, which has contributed to a high staff turnover among private tertiary institutions across Nigeria. The present trend is that parents, who prefer to enrol their wards in private institutions because of the incessant strike action in public institutions, are now frustrated by the prohibitive costs and dwindling standards of private institutions. Many students are dropping out of private universities because of the constant rise in fees and other service charges, which parents are increasingly unable to meet.

The gradual recent revival of the education sector commenced with the privatisation of the tertiary education system since the beginning of 2000s. Establishing the regulatory framework and policies for running public tertiary institutions alongside private institutions has been a herculean task. However, it is taking highly focused and regulated institutions, and committed investors and managers, to revive the sector and push Nigeria's universities towards the world-class ranking they held over three decades ago. This publication is an exhibition of the accomplished individuals who have contributed in various ways to reviving the lost glory of Nigeria's higher education sector. They have been at the vanguard of sustaining the gains that are being made in education for the progress of Nigeria and the African continent. They are individuals who are passionate about higher education and are regarded as shining lights and trailblazers in restoring Nigeria's education sector to the excellence it once enjoyed.

The subsequent chapters in this publication chronicle their contributions to various areas of higher education and the motivations and visions that propel their commitment to the revival of this sector, particularly in Nigeria but especially on the African continent. During several interactions in 2018 and 2019, these individuals, who are legends in the remaking of the Nigerian higher institutions, articulated their hopes and expectations for the growth and development of the sector in the short, medium and long term. They prescribed the responsibilities of government, private individuals and institutions, and higher institution stakeholders towards restoring excellence in higher education in the country. Above all, visionary and determined leaders are the ones that can propel the educational sector into global competitiveness and global reckoning especially in science and technology.

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Professor Olufemi Adebisi Bamiro: An Accomplished Academic, Educational Administrator and Engineer

Biographical Profile

Professor Olufemi Bamiro was born in Ijebu Igbo, Nigeria on 16 September 1947. He was educated in Nigeria and in 1968 went to Nottingham University, in England, where he obtained a BSc (First Class Honours) in Mechanical Engineering in 1971. He commenced and completed his PhD in Mechanical Engineering at McGill University in Canada in 1975, in the record time of two years, five months, having gained exemption from doing a Master's degree. He joined the Department of Mechanical Engineering of the University of Ibadan in 1975 and rose to become a professor in October 1983. He was a visiting professor to the University of Nairobi between 1986 and 1987. During his academic career, he held several positions, such as Head of Department of Mechanical Engineering, Dean of Faculty of Technology, Director of the University Management Information System, Deputy Vice-Chancellor (Administration), Acting Vice-Chancellor and finally Vice-Chancellor of the University of Ibadan in December 2005. He received many awards and fellowships in the course of his university career.

In 1990, Professor Bamiro served the University of Ibadan as the chair of the taskforce that handled the conceptual design, implementation and construction of the university's water supply scheme, with the installed capacity of six million litres of treated water per day, which effectively insulated the university from the erratic public water scheme run by the government in the city of Ibadan. During his tenure as vice-chancellor of the University of Ibadan, Prof. Bamiro supervised

the revamp of the collapsing infrastructure of the university and led the university back on the path to attaining its place among the best universities in global rankings. He provided the leadership for attracting funds that led to the establishment of the Centre for Sustainable Development (CESDEV), the Centre for Petroleum, Energy, Economics and Law (CPEEL) and the Earth and Life Sciences Hub of the Pan African University, which attracted local and international investment and brought international recognition to the university. His tenure also witnessed the review of the curricula of courses and programmes at the university to meet global standards and best practices in academic administration.

Prof. Bamiro opened up the second phase of the university's development at Ajibode village, where new physical structures were planned and erected to accommodate new programmes and enable the expansion of the existing structures. He initiated private participation in the provision of hostel facilities in the new development phase, and enabled the expansion of the Open Distance Learning facilities of the university, among other new developments. He drove the implementation of the various MacArthur Foundation-supported projects at the university, which revived extinct university ethics and culture on which academic tradition thrives. He initiated the construction of the university's ultra-modern conference centre by galvanising the university's endowment fund. With the support of the same fund, he established the university radio station, Diamond FM, to coincide with the university's sixtieth anniversary. He led the establishment of the 21st-Century Strategic Plans and Vision for the university and the modalities for the implementation of the plans, including finding ways to attract the resources to nurture them. In total, Prof. Bamiro spent thirty-seven years in the service of the University of Ibadan; he retired in 2012. However, prior to and after his retirement, he was engaged in numerous national assignments in education, technology and other sectors of the Nigerian economy, especially in the area of policy formulation and implementation for the growth and development of the nation.

In 1984, Prof. Bamiro was appointed secretary of the National Energy Panel, consisting of energy specialists, to produce a Comprehensive Energy Policy for Nigeria. He was appointed a member of the implementation committee of the National Science and Technology Policy (NSTP) in 1987 to prepare a blueprint for the technological direction for the country. He headed the Nigerian delegation of scientists that visited Iran in 1990 in respect of a Memorandum of Understanding in Science and Technology between Nigeria and the Islamic Republic of Iran. He was appointed by UNESCO as the lead consultant in respect of the reform

of the Science, Technology and Innovation System in Nigeria, where his major responsibility was to co-ordinate the reform of the tertiary education institutions within the framework of the project.

Prof. Bamiro was appointed a member of the Governing Board of the National Universities Commission (NUC) in 2011, and in 2013 became the co-ordinator of the committee that reviewed the Basic Minimum Academic Standards (BMAS) for the thirteen disciplines in the Nigerian university system. This culminated in comprehensive reports on each of the 185 programmes spread over the thirteen disciplines. He was made chair of the Tertiary Education Trust Fund (TETFund) Screening and Monitoring Committee of the National Research Fund (NRF), which has the responsibility for calling for research proposals, critically screening them and recommending to the board of the TETFund. Currently, he is the chair of the NUC Skills Development Advisory Committee, mandated to address the problem of graduate employability in the Nigerian university system.

In the international environment, Prof. Bamiro is the chair of the ECOWAS regional chapter of the Pan African Competitiveness Forum (PACF), established in 2008 by the African Union (AU), the Swedish International Development Cooperation Agency (SIDA) and The Competitive Institute (TCI), Sweden. The PACF involves sixteen African countries as well as several stakeholders outside Africa. He has also been the external advisor to the British Council on the Internationalising Higher Education Project since 2012.

Prof. Bamiro has served and still sits on the boards of several higher education institutions in Nigeria, including Pan-Atlantic University, Aja, Lagos (2012 to 2022); Tai Solarin University of Education (2014 to 2018); Redeemers University, Ede (2013 to 2021); Bells University of Science and Technology (2013 to 2022); Kola Daisi University, Ibadan (2017 to 2022); and Ogun State Polytechnic, Abeokuta. He also served as member of the Permanent Site Development Committee of the University of Agriculture, Abeokuta, in 1988.

In 2017, the Nigerian Minister of Education appointed Prof. Bamiro as the chair of the audit panel on the utilisation of the take-off grants for twelve new universities in Nigeria, which submitted a 725-page report to the minister on the audit exercise. Prof. Bamiro was also tasked by the minister to serve as a member of the federal government renegotiation team with the university staff unions. In politics, Prof. Bamiro was the Returning Officer for Oyo State during the 2011 general elections in Nigeria, appointed by the Independent National Electoral Commission (INEC). He was appointed an Emeritus Professor of Mechanical Engineering at the University of Ibadan in 2019.

Thoughts and Reflections on Higher Education

This veteran educationist and astute university administrator expressed his thoughts on a number of questions that pertain to improvements in higher education institutions, particularly in Nigeria but most especially on the African continent. He explored the role of higher education in achieving technological development on the continent and bared his thoughts on what could be done to attain a high standard of higher educational development on the continent. Some of his ideas were discussed during interactions with me, which spanned a number of days; others were extracted from statements he made during various public events and occasions related to higher education, and from other literature he wrote on the subject matter.

Philosophy on Higher Education

The question I always ask is: What are universities for? I think universities and higher education generally have become an important issue and have taken central position in the governance of any nation. Universities now play an increasingly important role in modern society. In the last two decades, higher education worldwide has moved from the periphery to the centre of governmental agendas in most countries. Universities are now seen as crucial national assets in addressing many policy priorities, and as sources of new knowledge and innovative thinking; providers of skilled personnel and credible credentials; contributors to innovation; attractors of international talent and business investment; agents of social justice and mobility; contributors to social and cultural vitality; and determinants of health and wellbeing. I would like to observe that the above surely captures the emerging functions of universities under the Triple Helix Partnerships, which involve government, business and academia. The practical operation of such a concept has largely accounted for the success of most rapidly industrialising economies. For example, the current policy drive of the United States to move from hydrocarbon energy sources to environmentally friendly renewable energy sources is predicated on heavily funded energy research by research institutions with active collaboration with the private sector.

Most governments are now looking to higher education to achieve economic development in order to key in to globalisation. Now, the challenge posed by globalisation across the world is the predominance of the 'knowledge economy'. The most important asset of developed economies and those aspiring to be developed is the knowledge of the people and quality of the workers. This is intricately related to the quality of the higher education system in any country

since it is only good-quality higher education that can produce good-quality workers. That is why higher education has taken centre stage across the world and countries look to universities to develop the right combination of quality, competencies and capabilities in human capital to develop their economies. They also look to universities to carry out research that will influence policy issues and evidence-based policies to guide the activities of governments and the development of nations. Because of this, there is a lot of reliance on higher education to produce the right human capital to enable nations to face the challenges of the contemporary world.

Apart from research, innovations also drive economies across the world. When you look at industrial competitiveness in developed countries, it is the quality of investment in higher education that enables countries to be competitive, and if you lag behind in the global context in your level of industrial competitiveness, you are not likely to go anywhere. If you look at Africa, our level of industrial competitiveness is very low and this is commensurate with the investment in our people and in our higher educational institutions, in terms of human capital development, research and innovation. Judging from the low level of research, capacity-building, teaching and such related activities in African higher institutions, there is no way we could take our rightful position in the comity of nations. Naturally, research should be rooted in developing the immediate environment of higher institutions, in building the technical capacity of the local people and in developing their standards of living, but all these are impossible where you have little investment in higher institutions of learning.

The University as a Resource for an Unknown Future and the Concern for Useful Knowledge

Let me quote this proposition by Boulton and Lucas (2008):

> I believe that the university is essentially concerned with 'useful knowledge', but that useful knowledge should not be interpreted merely as the immediately applicable. One of the roles of the university is to prepare the knowledge that an unpredictable future may need. A university that moulds itself only to present demands is one that is not listening to its historians. Today's preoccupations are inevitably myopic, often ephemeral, giving little thought for tomorrow. History is at its most illuminating when written with the full consciousness of what people wrongly expected to happen. Even in the domain of technology, future developments only a few years away have been shrouded from contemporary eyes. Many, possibly most, have arisen unexpectedly from research with other objectives, and assessments of technological potential have invariably missed the mark.

In respect of this quote by Boulton and Lucas, I would like to note that I have canvassed a similar position on the type of research to be conducted in our universities, both basic (not necessarily of immediate application) and applied (of immediate application). The main thrust of the above statement is that universities should engage in both basic and applied research. History is full of basic ideas that were lampooned by the so-called experts at the time of their emergence only to enter the domain of application with considerable and previously unimaginable impact.

Education being the central role of universities

> Generation by generation, universities serve to make students think. They do so by feeding and training their instinct to understand and seek meaning. True teaching disturbs complacency. They are taught to question interpretations that are given to them, to reduce the chaos of information to the order of an analytical argument and to seek out what is relevant to the resolution of a problem. They learn progressively to identify problems for themselves and to resolve them by rational argument supported by evidence; and they learn not to be dismayed by complexity but to be capable and daring in unravelling it (Boulton and Lucas, in Bamiro 2012).

Boulton and Lucas observed that the above are the qualities that ensure that students are not bemused and confounded by the collapse of a world that would have provided them with assured and predictable employment, but make them able and daring in addressing its problems. When leavened by deep technical understanding, these skills create a powerful alchemy that ensures an annual flux into society of trained and creative graduates who continually refresh its technical excellence and its economic, social and cultural vitality. They are crucial to its capability to take bold, imaginative and principled action in the face of an uncertain future, rather than cowering in fear of it. They are the qualities that every society needs in its citizens. Without them, society fails to exploit new intellectual capital and is unable to make decisive decisions. It will be a derivative society, buffeted by international trends but without the moral force to influence global developments.

I am aware that statements about the deeper, personal values of education can easily be traduced as sentimental attachment to an ivory tower, detached from a world of employment and the insistent utilitarian demands from a variety of stakeholders. I retort that such values are themselves utilitarian. They form the bedrock that enables the practical skills needed by society to be most intelligently deployed. Moreover, many of the qualities prized by government and business – entrepreneurship, managerial capacity, leadership, vision, teamwork, adaptability

and the effective application of specific technical skills – are not primary features, but derivatives of these more fundamental qualities.

I believe Boulton and Lucas are directing this proposition to their constituency – the universities. In line with comments from some serious-minded stakeholders in the Nigerian university system, some have felt, like Boulton and Lucas, that we in the universities have lost the plot. Rather than ensuring that our graduates are adaptive, competent and intellectually bold, we increasingly focus on developing highly specific technical skills deployed in predictable settings. We have been concerned with the derivatives rather than the fundamentals; what is learned rather than how it is learned; training for the short term rather than education for life. The challenge is – how do we nurture that culture in our students, of problem identification and thinking through its solution? I have always advised my students that they should not join the army of people, and quite an army it is in this country, including people holding leadership positions, who stay in the problem domain and never exercise their intellectual capacity to move to the solution domain along an uncharted path. Maybe the problem is that they have not been so trained.

Research or scholarship and the university enterprise

Research and scholarship are essential to the university enterprise only if they are intimately associated with the educational process. Research-only or teaching-only staff undermine the rationale for university research.

One of the reasons why education has come under pressure is the research imperative. In many settings, research and scholarship have become the enemies of good teaching rather than its necessary complement. Many universities have given research such priority that it is becoming an activity separated from teaching. The establishment of teaching-only and research-only posts is symbolic of the shift. Universities are certainly not exclusively, nor even primarily, research institutions.

Boulton and Lucas examine the above further:

> Why do teaching and research belong together? It is because the best research and the best teaching depend upon a culture and individual attitudes that value curiosity, scepticism, serendipity, creativity and even genius. They are values that are crucial to the university educational process at its most profound, and are most readily acquired in an environment of free-ranging speculation and research. On the other hand, the transfer of research-derived understanding into society by graduates who embody it is probably the most powerful vector by which it reaches society; more important than publications, than spin-outs and technology transfer offices (Boulton and Lucas: 2008).

If my experience at the university of Ibadan is anything to go by, the reward system is yet to give teaching the pride of place. Promotions of academic staff are decided largely by measurable research output. This is not far removed from the fact that while research outputs are measurable in terms of quality and quantity of publications, attempts to introduce some measure of teaching capability or effectiveness of lecturers, through instruments such as student evaluation of their lecturers, have met with stiff opposition. Whether measured or not, the fact still remains that we have to pay greater attention to what we teach and how we teach it.

Furthermore, in developing the research capacity of our students, attention should be focused on the process involving problem identification, analysis and solution. In other words, the greatest gain in the research endeavour is not the product or result as such; the exposure to the process is the most enduring benefit.

Universities are an Important Part of the Modern Innovation Process, but not as its Driver

What is the role of universities in innovation? Innovation is predominantly a process of business engagement with markets. Universities are not the drivers of these processes, but they do increasingly contribute to the fertility of the environment that innovation needs if it is to flourish. Direct commercialisation activities do not, even in the USA, where university commercialisation is best developed, contribute significantly to GDP. In Silicon Valley, Boston and Cambridge, even high-tech companies do not regard the university amongst their principal direct collaborators. Universities have a different role, which is to help create an environment sympathetic to and supportive of innovation, and particularly where there are internationally competitive research and excellent graduates. They produce centres of creativity that attract research-intensive companies and investment into a region and help catalyse innovation in indigenous businesses. The bedrock for this potential remains, however, the university's commitment to education and the exploration, through research, of the limits of our understanding.

In several lectures that I gave on innovation and the Nigerian university system, I posited that innovation is not the exclusive preserve of universities, just as universities have lost pride of place as the only source of knowledge. Several knowledge centres with ICT-enabled access now exist in the information superhighway. Also, significant innovation is taking place outside the university system in the Nigerian business sector. In other words, innovation that can significantly transform our industrial landscape does not have to emanate from big science or earth-shaking research results. The major driver is an entrepreneur who has imbibed the culture of

curiosity and has developed the capability to take bold, imaginative and principled action in the face of an uncertain future, rather than staying coolly in his perceived comfort zone. Of course, global competition has ensured that such a comfort zone does not last. This is where, to my mind, the university comes in to help sustain competition through incremental innovation that flows into the industrial space to sustain actors in competition. This is the major driver of the university–industry collaboration. The Tshumisano Trust Agency of South Africa best illustrates the case of a government funding research-driven innovation for transfer to the target industrial sector to improve competitiveness.

Technological innovation is predicated on the need to achieve global competitiveness in key industrial sectors. But where is Africa on the scale of global industrial competitiveness? In response to the concern for industrial competitiveness in Africa, the Conference of African Ministers of Industry (CAMI) was held in March 2011 under the theme 'Enhancing the competitiveness of African industries through increased and improved value addition'. Of relevance are the following observations by the organisers of CAMI:

> According to the 2009 Africa Competitiveness Report, 23 African countries out of the 31 that were surveyed remain at the most basic stage of the competitiveness index of a factor-driven economy (that is, one whose ability to compete is based on unskilled labour and natural resources). Only five countries – Algeria, Mauritius, Namibia, South Africa and Tunisia – have reached the second stage of competitiveness – the efficiency-driven stage (which is driven by efficient goods, sophisticated labour and financial markets, a large market size and the ability to utilise technology effectively). No African country has reached the innovation-driven stage, that is, a stage based on an ability to compete with new and unique products, and the use of sophisticated production-driven competition.

Based on the above, it can be seen that most African countries, of course including Nigeria, are still at the basic stage of competitiveness, with ability to compete based mainly on unskilled labour and natural resources, which, in most cases, are agro- and mineral-based. This is accentuated by the fact that while 98 per cent of agricultural production in high-income countries undergoes industrial processing, in developing countries, barely 30 per cent is processed. Yet, the latter's agro-processing industries generate 40 to 60 per cent of value-added manufacturing and agro-industrial products account for half of all exports from most developing countries. Noted further is the following submission of the CAMI planners:

> The industrial processing of mineral resources can serve as a trigger for industrial diversification of the economic basis of Member States. This will trigger a carry-over effect on the development of technology, well-trained labour and managerial

methods. Industrialisation based on mineral processing can have as objective, the creation of a regional industrial base, geared towards producing intermediate products to meet national and regional needs and the export of a part of those products to meet foreign demand.

The key drivers for these include having, among others:

- A significant entrepreneurial base looking at opportunities to service local, regional and export markets
- Competitive production (high productivity, low costs compared to competitors)
- Craftsmanship and specific skills
- Access to markets (domestic and foreign)
- Good market intelligence
- Research and development.

Thus, if African countries are to embark on the proposed value addition, considerable funding of targeted research and innovation must be expected. This has most likely informed the African Development Bank (AfDB)'s USD 63.24-million funding package for the implementation of a five-year agricultural research project. The project, dubbed, 'Support to Agricultural Research for Development of Strategic Crops in Africa (SARD-SC)', involving research establishments in the region, was meant to enhance the production of staple food items like cassava, rice, maize and wheat. Surely, this is an excellent step towards achieving food security in the region. This is the type of research agenda one can expect in Nigeria at the national and state levels. Our universities have to show commitment to research-driven incremental innovation to support the elements of the value chain in agriculture and other sectors to achieve sustainable development. It is hoped that the Agricultural Research Fund will be devoted to such a targeted research agenda.

On the Role of Higher Education Institutions in Integrating Science, Engineering, Technology and Innovation (SETI) to Achieve Millennium Development Goals in Africa

Scientists are part of a collective intelligence that is energised by the grand questions posed by nature or by challenges in the industrial place and the source of this energy is nothing less than the human spirit. Thus, if innovation is to drive our business organisations, then science, the innovation force, will have to be more closely integrated with business to achieve the development we seek through finding 'our own solutions to our own problems'. Scientific capability unlocks

the potential of innovation and technology to accelerate economic growth. It can therefore not be ignored in the scheme of things.

In respect of the state of scientific capacity in Africa, the African Network of Scientific and Technological Institutions (ANSTI), in its report entitled 'State of Science and Technology Training Institutions in Africa' states:

> After two decades of neglect of all aspects of higher education in Africa, there are now signs that the situation is changing. In particular, there is awareness that Africa cannot achieve any of its development objectives including the MDGs unless there is a substantial investment in building scientific human resource capacity and in scientific research. There is therefore a renewed commitment to support S&T training and research institutions. The trends, though very encouraging, may not however yield good results, unless the institutions involved in research and training, acting collectively and individually, develop action plans that will become the basis for the investment. (ANSTI 2005)

The report noted that 'on average, across the region, about 40 per cent of the established posts in S&T training institutions are vacant. The main obstacle to recruitment of staff is the poor remuneration and other benefits. Brain drain and the inability of most institutions to train their own staff have compounded the problem of staff availability.'

There is, however, some regional scientific capacity in Africa. The African Economics Research Consortium (sub-Saharan Africa), the Biosciences Facility for Central and Eastern Africa (hosted in Kenya), CIDA City Campus (South Africa), the Kigali Institute of Science and Technology (Rwanda), and the University Sciences, Humanities and Engineering Partnership (Central and East Africa) are some examples of the centres, institutes, universities and partnerships identified in the Blair Commission Report (2004). There is also the proposed African Institute for Science and Technology (AIST), which is expected to act as a springboard for developing scientific capacity. In recognition of its important role in Africa's economic and social development, Nigeria has been selected to host the first campus of AIST, an initiative of the African S&T community, supported by the World Bank. Such centres of excellence in research are expected to be both physical centres and virtual networks of research that are internationally competitive and regionally relevant. They need to be regional, as conducting research is beyond the resources of most of our countries. Such centres should operate as 'innovation hubs', fostering innovation, entrepreneurship and technology diffusion. They also need to engage with local communities, the government, the African diaspora and international partners to ensure that science extends beyond the laboratory into everyday life while participating in the global knowledge community.

The word 'innovation' requires definition bearing in mind the recommendation that every country carry out a critical review of its national Science, Engineering, Technology and Innovation (SETI) system. This is because innovation is often confused with research and measured in terms of scientific or technological outputs. In developing economies it is customary to see innovation as the end product of the process that runs from invention through development to commercialisation and diffusion of invention. In this context, innovation is associated with the activities of individuals or firms at the frontier of knowledge. Such a definition is rather restrictive. Recent literature stresses that innovation is neither research nor science and technology, but rather the application of knowledge in production. This knowledge might be acquired through learning, research or experience, but until it is applied in the production of goods or services it cannot be considered innovation. As observed at the Conference on S&T for Development organised by the New York Academy of Sciences in Harare, Zimbabwe:

> Innovation is key to Africa's economic future. Times and perspectives are changing. Africa is a young continent. A new generation of young Africans – free, educated and technologically literate – will become the scientists who can push the edges of knowledge, the business leaders who can transform knowledge into goods and services demanded by internal and global markets, and the government officials who create a fertile policy environment for both discovery and innovation. A spirit of collaboration must nourish their efforts. Partnerships are the pathways to greater African prosperity.<end Q>

The importance of innovation is, however, not lost on our governments. The first NEPAD Ministerial Conference on Science and Technology in 2003 called on the NEPAD Secretariat to initiate activities that would generate an African Innovation Outlook (AIO), that is, a comprehensive profile or survey of the innovation landscape. It further agreed to promote the application of a national system of innovation (NSI) framework and methodology to guide and inform policymaking.

The imperative of integrating Africa into global science and technological development trends through higher education and training

If Africa is not to be further marginalised, but rather benefit from science and technological developments, two initiatives are crucial. Africa must:

1. Improve its scientific and technology training and aim at the highest standard for at least a minimum core of specialists;
2. Forge new partnerships with qualified firms and research institutes in developed countries.

In a nutshell, the world today is knowledge-intensive and increasingly dominated by the emerging technologies – information technology, new materials, etc. Furthermore, mere possession of capital or mere heritage of natural resources is no longer a pre-condition for national development. Future developments in the economic, social, cultural and environmental fields will be more and more technologically based. Creating and sustaining a knowledge-based economy requires an innovative system of policy-making. Strategies based on centrally controlled, centrally dictated and rigidly regulated economic decision-making, which we seem to have now in some countries in Africa, will simply not work. The core actors in the process are not central bureaucracies, but a diverse and rich mix of academic and private entrepreneurs and researchers whose skills and curiosity can combine in myriad ways to create innovation. In such an economic kaleidoscope the role of government shifts from dictating to facilitating. The key to the whole process is partnership – between science, engineering, technology, economics and public policy, and between tertiary institutions, the private sector and government.

To achieve the new trajectory of development, our institutions for SETI capacity-building (including education, training, and R&D) must place due emphasis on the key areas of:

- Entrepreneurship development
- Management for production
- Professional and skilled labour development
- Basic and applied science
- Engineering for production
- Technology (including Information and Communication Technology).

These are areas of SETI capacity-building with relevance to the development of our nation states. Our institutions must evolve those types of teaching, training, learning and research programmes that would provide the skills base for internalising the development process, establishing linkages and complementarities among the production sectors and serve as most effective domestic catalysts for growth and socioeconomic development, following strategies that are most appropriate to our needs and realities.

What could be done to have an Ideal Higher Education in Africa?

Higher education institutions should be accorded the right recognition in African countries. They should be recognised and invited to contribute to policy formulation and be made to play a key role as agents of development and as key

components of the governance system. If they are to play key roles, sufficient resources must be allocated to support higher education, and institutions should be encouraged to make intellectual inputs to governance. I think the area of funding is the most important in this aspect. From personal experience as an educational administrator, the contribution of the sector to society will always improve when there are enough funds to acquire equipment, conduct research and brainstorm on innovations. So, in essence, funding is the key.

On Challenges faced as Vice-chancellor of the Oldest University in Nigeria

Well, the most important challenge met on the ground as vice-chancellor of the University of Ibadan is still the problem of funding. As the oldest university, the infrastructures were deteriorating and collapsing as a result of old age. Equipment and training facilities were outdated and needed to be upgraded and the resources available to the university were meagre. But beyond that, the university did not have a specific focus. Thank God, however, that the university council I met on the ground, the Festus Ohiwerei-chaired Council, had recognised this lacuna in the university and was able to convince the university community that there was a need to refocusing the university's vision. We went through the exercise of crafting a vision with excellence as the goal. Hence, it was decided that the University of Ibadan should become a postgraduate university in view of its strength and age in order to help the nation develop the required human capital to drive the expanding university system with the intervention of the private sector in higher education. It was recognised that there was a serious shortage of qualified staff to drive the new universities that were being established. At the time, it was estimated that there was a need for at least 7,000 academic staff to drive the new universities that were being created across the country. I'm sure the requirement will be more than that presently, with more universities coming on board and more programmes being created in the existing universities.

It was good that the decision was taken to become a postgraduate university at that time, concentrating on producing Masters' and PhD students, and gradually reducing the number of undergraduates being produced, which are being left to other universities. The University of Ibadan thus concentrated on producing high-level staff for other universities. Luckily, the next university council, chaired by Gamaliel Onosode, keyed into the vision and developed a strategic plan to actualise the vision of the university. The university went beyond crafting a strategic plan but also developed an implementation plan. In the end, the first properly documented strategic plan of the University of Ibadan, 2009–2014, emerged,

with financial requirements and all. The next challenge we faced was the problem of capacity-building to actualise the content of the strategic plan. We realised that a number of people in the system did not have a PhD, which was a requirement to stay in the academic system. We needed to respond to this key issue if we were to achieve the objective of becoming a fully fledged postgraduate institution.

We were very lucky that the period coincided with the interventions of the MacArthur Foundation. The foundation made capacity-building its focus of assistance to the university and decided to leverage on technology to achieve this. The university eventually began to think of how it could help the nation to address the problem of difficulty in accessing higher education among the population. We came up with the idea of developing the distance learning system, again leveraging on the support of the MacArthur Foundation, which was ready and willing to support the expansion of the university Distance Learning Centre (DLC). Within a short time and with hard-working and committed staff, we were able to grow the population of the DLC from 1,000 to 15,000. The enrolment of students in distance learning became higher than that of regular undergraduate students at the university, which was about 1,000 before I left. So thank God for the financial intervention of MacArthur Foundation; we were able to train and retrain more staff of the university and increase the student intake. Beyond this, we were able to enter into a number of memorandums of understanding with a number of universities in the United Kingdom, the United States and the Commonwealth, to boost our staff training and capacity-building. We were able to send staff and administrators on training and expose them to best university administration practices for periods ranging from three months (for administrative training) to three years of postgraduate training. This really improved the ability of the participants to understand a proper university culture, which was hitherto lacking in our university.

Our university funding was boosted when the University of Ibadan was chosen by the federal government as one of the beneficiaries of the special intervention fund for six universities picked from six geopolitical zones across Nigeria. Each of the universities selected was to come up with plans and projects that could be implemented with NGN 5.5 billion, and they were given two weeks to do so and present them to the Tertiary Education Trust Fund (TETFund). The challenge we then faced was what exactly we could come up with within two weeks among the myriad needs and proposed projects of the university. Thank God again that we already had a strategic plan for the university. This helped us to streamline our immediate needs and then we adopted a bottom-up approach in prioritising the needs of departments, faculties, institutes and bodies of the university. I personally

led a team to every unit and department of the university to discuss their needs and requirements, and even though it took more than two weeks, we were able to come up with the best package among all the selected universities who were asked to bring a proposal to access the funds. When we brought our project proposal to the TETFund, it was a very detailed document of about eighty pages, whereas some other institutions brought about two pages or so. The chief executive of TETFund was so impressed that he rejected proposals from other universities and enjoined us to kindly train them on how to develop their proposal using our own as a model. He thus extended the time limit for the submissions for others to improve their proposals. The TETFund boss further insisted that other universities must develop strategic plans and any future request for funding to the organisation must fall within the strategic vision of each university. That was the beginning of that policy at TETFund.

At the end of the day, the TETFund made only NGN 3 billion available to our university out of the NGN 5.5 billion that was promised. We used the fund to rehabilitate the physical structures that had deteriorated in the university. Leaking roofs in many of the laboratories and faculties were replaced and collapsed structures were reconstructed. All the rehabilitation activities fell within our strategic plans because there was no way we could continue without rehabilitating the physical structures on the university campus. We also wisely used part of the grant to open up the university extension at Ajibode. We had already anticipated that the main campus was filling up with structures and might not accommodate further expansion. We initiated drawing up a master plan for the second phase of the university, but in order to make the movement to the second phase smooth and hitch-free, there was a need to construct a link road between the main campus and the second phase. With the effort and help of Senator Iyiola Omisore, we were able to get the National Assembly, specifically the Senate, to make a special budget allocation to UI. With that allocation we were able to construct the present link road between the main campus and the Ajibode extension. We also constructed a solid bridge over a river that separated the two divides and I think that was a commendable decision, because otherwise the perennial flooding from the river would have washed away the new road.

On the Idea of Equipment-sharing among Higher Institutions

We came up with the idea of developing a multidisciplinary research laboratory when we discovered there was a lot of duplication of expensive laboratory equipment in different departments in the university. This is an idea that I wish

other universities could emulate. Particular equipment, let's say an electron microscope, which is worth about NGN 150 million, was acquired by a particular department and it remained in that department, where other departments and even scholars from elsewhere within the vicinity of our university who were in need of such equipment could not have access to it. Our researchers even sometimes travel abroad to carry out critical research because of the non-availability of equipment. Instead of other departments struggling to acquire the same equipment, which in any case they may not be able to afford, we decided to place such equipment in the Central Research Laboratory on campus where it could be accessed by all scientists on campus. We were lucky that when we floated this idea, the MacArthur Foundation and other donors supported our idea and we were able to begin the Central Research Laboratory along Abadina Road on the main campus. This solved a lot of our problems in terms of access to research equipment.

We even extended it further to sister universities, but the paucity of funds stalled the process. For instance, we had a handshake with Obafemi Awolowo University, Ile Ife, by informing them that we had acquired some equipment which we could give scientists from their university access to. They were very excited about that and they also said, oh, since you have acquired that equipment we could also acquire another one that could be useful for other kinds of research and share it with you. If that process had continued, by now Nigerian institutions would have acquired sufficient research equipment so that we would not need to travel abroad to have access to critical research equipment.

On Academic Research Co-operation

We shared that idea with TETFund and suggested to them that they could use part of the grant extended to each university to establish specialised and multidisciplinary laboratories in critical locations across the country, whereby equipment could be placed and made accessible to scientists and researchers across the country. Universities with unique capabilities in different scientific areas could host and manage such laboratories, while scholars from other locations could have access to them. This would have reduced the rate at which our researchers were travelling abroad for research, and economy of scale would have applied to the usage of such scientific equipment. Unfortunately, the balance of NGN 2.5 billion from the special grant due to six selected universities across Nigeria was diverted to establish new universities by the President Goodluck Jonathan Administration. If the grant had been granted and judiciously used, it would have solved a lot of problems in the universities, including at UI.

This idea is still feasible and I think universities should pursue it. Such academic research co-operation will not only make research cheaper, it will also enrich the quality of research conducted locally. It will not only encourage the best brains around to get together irrespective of where their institutions are located, but will put critical national problems under their research priorities and they could have access to more resources to carry out critical research.

On the Interdisciplinary Nature of Future Research in African Universities

It is pertinent to note the interdisciplinary nature of the research environment in the profile of the highly rated universities across the world. As I noted (Bamiro 2014), not a few from the American scientific community have advocated for interdisciplinary rather than monodisciplinary approaches to problem-solving in the twenty-first century. This has been echoed by US federal funding agencies, particularly the National Institutes of Health (NIH), with their grant proposals framed more as interdisciplinary collaborative projects than single-researcher single-discipline ones. This accentuates the fact that multi- and interdisciplinary research teams will be required to solve the 'puzzle' of complex diseases and conditions. This may be the case for the Ebola that ravaged the West African subregion, with researchers still to get ahead of the problem. Most environmental problems are also of this nature.

As noted by Jamil (2009), the few scholars who have attempted to define what it is that world-class rated universities have that regular universities do not possess have identified a number of basic features that should be of interest to those aspiring to transform to a world-class university. Interdisciplinary collaboration in their research output is certainly one of them.

On Private Sector Intervention in Higher Education

The opening up of the Ajibode Extension of the University of Ibadan conformed with our vision of turning the university into a postgraduate institution. The plan is that the vision is bound to bring physical expansion into the university, but it must be private-sector driven. New accommodation facilities, laboratories, classrooms and lecture theatres are now being built in the extension, some already completed. We therefore developed a number of incentives to attract investors and donors. Part of such incentives were the Build, Operate and Transfer policies, which would enable individuals to build student hostels, operate them for profit for a while and then transfer ownership to the university. The university also invests

in such projects by providing the land on which such hostels are constructed. This has received wide acceptance from the private sector; already, a number of private individuals, such as High Chief Adebayo Akande, have built accommodation and other facilities which have aided development in the university. Other similar projects are ongoing in the Ajibode Extension.

The future of higher education in Nigeria, indeed Africa, lies in the contribution of the private sector to educational development. It is not possible for government to shoulder all the responsibilities for higher education.

Lessons from the Achievements of the University of Ibadan Endowment fund

Some time during the 60th Founders' Day celebrations of our university, I gave a lecture titled 'Where are we in UI'. During the lecture, I pointed to the various assistance given to the university by the endowment fund, which was being managed by alumni and other friends of the university. They are all people of integrity and mostly experienced business people. The endowment fund was established in 1973, in the university's Silver Jubilee year. Members of the endowment fund committee were able to manage the funds profitably and successfully. Apart from advancing various sums to the university annually for projects, the endowment fund was critical to the establishment of Diamond FM Radio, the university radio station, which was named to mark the sixtieth anniversary of the university. By the time I was giving that lecture, in 2008, the endowment fund had grown to about NGN 1.3 billion from the initial investment of about NGN 80,000. The funds were heavily invested in shares, which were seriously and dangerously fluctuating. Prevailing wisdom suggested that the funds should be invested in more stable ventures that could do better for the university.

After my lecture, my very good friend, Dr Tony Marinho, also an alumnus of the university, asked why we couldn't suggest to the endowment fund committee that it invest funds in acquiring medical equipment, which could be made available at a profit for our compatriots who often travelled abroad for medical treatment because such equipment was not available locally. In the process, the equipment would be used to train our medical students, and medical consultants would have something to work with. This would become a win-win situation for the university because it could run the equipment for a profit while also enhancing the quality of our medical students. It would also reduce the rate of brain drain in our medical college. We were still considering this when I was invited as a guest to the convocation ceremonies of the Covenant University, Ota, and I asked my

deputy vice-chancellor, Prof. Bamigboye, to represent me at the occasion. When Professor Bamigboye came back I noticed he was feeling very sad and I asked him what the problem was. He responded by telling me about what he saw at Covenant University, which was established barely five years at that time. He told me that within the short period of its establishment, the university already had a very big hall which was able to accommodate all the graduating students of the university, their parents, all members of faculty and all the guests of the university to the convocation. His mind flashed back to our own Trenchard Hall which was built almost sixty years earlier and which obviously had become unbefitting for the size of our university, to the extent that we had to break up our convocation procedures into several days because the hall could not contain our graduands, the faculty and the guests of the university.

It then occurred to us that we needed to invest in the construction of a new, bigger and more befitting hall for our university. But then, where would the funds come from in view of the numerous contending needs of the university? After a lot of brainstorming, we then decided, why can't we persuade the university endowment committee to invest in building a suitable hall for the university? We then approached the chairman of the endowment fund committee, Oloye Ogunlana, to ask him to encourage his committee to invest in our proposal. It was there and then that he raised the critical question of whether that is what the university wanted at that time. How did that fit into the university's strategic plan? It was then we discovered that we should have thought beyond constructing an ordinary hall. We observed that even the university conference centre had become too small to contain all the events of the university and there was no doubt that the university needed to have an adequate international conference and events centre.

Eventually, the endowment fund committee agreed with us that it made sense to have an international conference centre that could be made available to the general public beyond the academic community, for a profit. Moreover, Ibadan city offers a big market for such a venture in the sheer size and number of events and commercial activities that take place in the city. However, the endowment committee gave some conditions to support the construction of the international conference centre: all the professionals that handled the job must be Nigerian and all the materials for the project must be sourced locally. In essence the contractors and consultants had to be Nigerians to showcase that we could implement such a gigantic project locally.

That decision was a great one because of the inherent potential. Advertisements were placed to attract proposals from reputable architects for designs for the proposed international conference centre. Eventually, we were able to narrow down

the best of the architectural drawings and then select what we considered the most suitable among them all, while offering a small compensation to the architects whose drawings we did not pick. We also called for bids among local contractors and chose the best for the project to commence. Our decision was justified shortly after our steps to commence the construction of the conference centre, when the share capital market in Nigeria collapsed and peoples' investments evaporated. The funds would have gone! That was the genesis of the present international conference centre in UI, which, since its inception, has contributed immensely to the economy of the university while also boosting the academic activities on campus. It is inarguably one of the largest of such centres in Nigeria and offers appropriate facilities for public social events. The location was carefully selected so that its use would not disrupt academic activities on the main university campus but yet would be available and accessible to the general public.

The Need for Specialised Research in Universities

As I mentioned earlier, the global knowledge economy is driven by research and innovation. It is not possible for universities to engage in all areas of research, hence my earlier suggestion for the creation of zonal specialised laboratories across the country, which could be made accessible to all scientists in the country. Now, it makes sense to use the individual strengths of each university and build on them. For example, the University of Ibadan excels in medical sciences; it could be encouraged to concentrate on this field and support it with the necessary resources and equipment. The University of Nigeria, Nsukka is very good in mathematical sciences, and it could be encouraged to concentrate on those subjects. Ahmadu Bello University is strong in space science, and it could make this its specialisation. Since all these research areas are relevant to national objectives, it makes sense to encourage these specialisations to optimally utilise resources to achieve the best for national development.

Government Bodies should Desist from Awarding Contracts for University projects

I have related how some intervention funds were extended to UI by the TETFund. After we tendered our proposal and the projects were approved, we discovered that the civil servants within TETFund were already planning how to award contracts for the projects and were trying to identify and select the contractors and suppliers for this purpose. We were not happy about this because we knew it wouldn't work. In my convocation speech in 2009, I referred to this trend, by first acknowledging the

TETFund for supporting the selected universities to revamp their facilities. I, however, said it appeared that the TETFund was gradually transforming to become like the old Petroleum Trust Fund (PTF) of the military era, which decided what project was suitable for each university and without consulting the institutions awarded contracts for the implementation of projects and supply of equipment. Many of these projects were eventually abandoned or became unsuitable for the beneficiary institutions. I therefore pleaded that the TETFund should desist from this approach and allow higher institutions themselves to award contracts for their projects and supply of their equipment so that they could determine what was suitable for them and monitor contractors to ensure they did the right thing. It would remain the duty of the TETFund to monitor each institution to ensure they followed due process in terms of project implementation and monitoring of contractors and suppliers.

Surprisingly, my statement reached the management of the TETFund, perhaps through its representative at our convocation, and it became a controversial point of debate in their office in Abuja. The organisation's management began to deliberate on whether it was doing the right thing, especially in the face of pervasive corruption that often emanates from contract awards and management of projects by government bodies. Eventually, it dawned on the TETFund that they were supposed to be a funding agency for educational institutions and not an executing agency for the projects they supported. Hence, that intervention of mine largely contributed to the present policy of the TETFund, which has made the organisation successful in its current activities. I think other government institutions should follow the same track. They should provide support for higher institutions but desist from getting involved in project implementation, because every institution is sufficiently equipped to determine what is suitable for them. Moreover, it will curb the trend of corruption associated with project implementation in higher institutions.

My earlier reference to the PTF projects during the Abacha era is very instructive. Professor Omoniyi Adewoye was the vice-chancellor of UI at that time and he appointed me to monitor the various university projects. One day I received a call from a colonel from Abuja who told me he had been awarded a contract to supply equipment to the dentistry department of the university by the PTF. Of course, he did not know anything about the equipment and yet he had been asked to supply it. The university was not consulted before the contract was awarded. We had to go to the dentistry department to find out the specifications for the equipment and collect all other information for him to supply. Obviously the man was a retired army officer who had been found idle by his colleagues in government. The contract was awarded to him in order to make him relevant again and boost his economic situation.

In another instance, a contractor was awarded a contract to construct a road on campus, but he had never been to the site. He called me and asked me to show him where Oduduwa Road would be. Anyway, he started the construction but he did not do the kerb well. I told him he was doing rubbish and we were not going to accept that kind of project from him. I called him to let him know this, but the question he asked was: 'Did you people award any contract to me?' Clearly, he did not have any obligation to us. His obligation was to the people in Abuja who had awarded the contract to him. One day, he appeared in my office and attempted to offer me a bribe, which of course I turned down. I threatened to report him to General Buhari, the head of PTF, but he was not perturbed. He just left. Later when we looked at his official company address, we discovered it was in the Palace of Olubadan of Ibadan, the traditional ruler of Ibadan, in which UI is situated. Well, that was the end of that incident. This is to show you the extent of corruption that could accompany contract awards and implementation in higher institutions when it is not initiated from within.

On Government Educational Policy Somersaults and Inconsistencies

Government policy somersaults and inconsistencies are another bane of educational development in Africa. A very good example is the grant of the NGN 5 billion I referred to earlier during the Jonathan Administration in Nigeria. After releasing three billion, the balance – which was supposed to go into erecting zonal laboratories and other projects that would have raised the standards of the affected institutions – was never released. That's why I found it interesting that some people ignorantly spoke about the 'five billion Naira grant given to UI'. Then, the Jonathan Administration decided to establish nine new universities across Nigeria at the same time without determining where the resources would come from. The government wrote to the TETFund to divert the balance of the NGN 5 billion grant to the take-off of the new universities, which included one in the village of the President. Can you imagine what the establishment of the zonal laboratories across the country could have done in uplifting the research capacities of the existing universities? Unfortunately, the fund was diverted and the universities remain in the same position. The new universities that were established are presently comatose and are not doing well because of the lack of resources to sustain them. I can assure you that many universities may collapse and close down across the country in the next few years due to a lack of resources.

When government began to award licences to private universities, the projection was that these institutions would provide more admission opportunities to eligible candidates who could not be accommodated by the federal and state universities.

However, when that policy was being made, no sufficient thought was given to the question of affordability by parents. I think presently there are about 163 universities in Nigeria, but I can assure you from the studies I have made that most of the private universities have students below their carrying capacity. Many parents cannot afford to send their wards to private institutions because of the high cost. A 2018 projection indicates that all the universities, both public and private, should be able to admit about 608,000 students annually. Presently, they are admitting less than 500,000, with a shortfall of about 140,000. Nobody is asking what happens to the students within that shortfall. It is not that there is no space for them, but most cannot afford it. I happen to be involved in a particular, recently licensed private university that has only 38 students when it can conveniently accommodate 500. The proprietors of many of the private universities are currently in a dilemma and I know that very soon some of them may close down.

One thing I know is that if adequate funding were provided for the existing universities, they could still accommodate more students because their carrying capacity is not yet exhausted. So, to me, it doesn't make sense to be licensing new private universities or establishing new government universities when the existing ones are not being fully utilised. Moreover, both the old and new universities draw from the same pool of academics which is far too short of the required number. None of the existing institutions have the resources to attract lecturers from outside Nigeria and the situation of postgraduate studies is appalling.

On the Sustainable Management of a Public University and its Resources

The funding scheme of the public universities, characterised by heavy reliance on government funding, is unsustainable. The situation calls for the involvement of all the key stakeholders – government, academic institutions, parents, funding agencies, etc. – in cost-sharing. Implicit in this is the need for every institution to put in place a computerised enterprise resource planning model for a better determination of the real costs of education, training and research, coupled – most importantly – with the optimal management of resource inflow and outflow. This will facilitate the evolution of evidence-based policies and implementation to achieve the sustainable financing of our universities.

To this end, I would like to draw attention to the important role of the vice-chancellor and the governing council in the administration and management of the institution towards the effective implementation of the various plans and programmes articulated above. This is because the growing complexity of universities now requires professional management and administration in many

ways similar to large organisations. Vice-chancellors are now chief executive officers (CEOs) as well as academic leaders. As CEO, a vice-chancellor has to oversee the administrative, financial affairs and academic affairs of the university. As remarked by Mohamedbhai (2011):

> Universities now require leaders who are not just professors having come up the rank of academia through scholarship but can also operate as professional managers. In addition to having academic credibility, they should be strategic thinkers, have a reputation for integrity, be good communicators, and be able to manage crises effectively. They should be fair and consultative in their approach but equally bold and firm in their final decisions.

Added to the above is the need for the institutionalisation of appropriate feedback as an instrument to gauge performance and evolve strategy to achieve optimal performance. This is most important bearing in mind the dynamics of several factors that impact on the operational management of our universities. I have come to appreciate some of the effective feedback mechanisms in place in the four university governing councils that I have had the unique opportunity of serving as a member (in three) and former chairperson (in one). Worthy of mention are the following items, which are always included in the agenda of Council during statutory meetings:

- Vice-chancellor's situation report
- Financial report and budget performance by the bursar
- Report of progress on the implementation of the university's strategic plan.

In the vice-chancellor's situation report, he or she is expected to provide highlights of the situation between the last meeting of Council and the present meeting in respect of the following, among others:

- Academic matters
- Staff matters
- Student matters
- Progress of ongoing projects
- Key events in the university.

Issues requiring the attention of Council in respect of each of the above are discussed and decisions taken.

Under the financial report and budget performance, the bursar is expected to provide highlights of the financial status of the university. Identified problems for the attention of Council are presented together with suggestions on the way

forward, from management and the Finance and General Purposes Committee, which must have deliberated on the issues before the council meeting. The report is also expected to provide highlights of the implementation of the approved university budget for the financial year. Such an open system of financial management has gone a long way to prevent the usual crisis of confidence between unions and staff.

Universities are expected to put in place a mechanism for monitoring and evaluation of the implementation of their strategic plans. Well-developed strategic plans are expected to contain a timeline of activities and, most importantly, key performance indicators (KPIs) to measure progress. The vice-chancellor is expected to apprise Council on the progress made while highlighting areas requiring the attention of Council towards achieving targets.

On being a Service-intensive University

Put simply, a service-intensive university (SIU) is one that deploys its locally and globally acquired competencies to identify and address national problems geared towards achieving the socioeconomic development of the nation-state. Of cardinal importance and focus is the nation-state, particularly the challenges it faces in taking its rightful place in the comity of nations. Thus, while a SIU may not necessarily be a world-class university in the strict sense described above, it develops some of the attributes of a world-class university in becoming an agent of national development, which thereby defines its relevance. Therefore, becoming an SIU is a matter of critically identifying various developmental problems and making deliberate efforts to acquire, from all sources – local and global – the capability to solve such problems. Thus the concepts of 'world-class university' and 'service-intensive university' are not mutually exclusive. It is a matter of possible differences in focus and intensity in the development and deployment of teaching and research capabilities.

Attributes of a World-class University

As noted by Jamil (2009), the few scholars who have attempted to define what world-class rated universities have that regular universities do not have identified a number of basic features which should be of interest to those aspiring to transform into a world-class university. These are:

1. Highly qualified faculty
2. Excellence in research

3. Quality teaching
4. High levels of government and non-government sources of funding
5. International and highly talented students
6. Academic freedom
7. Well-defined autonomous governance structures
8. Well-equipped facilities for teaching, research, administration and student life
9. International reputation of the university
10. University's contribution to society.

Let us adopt the Jamil model, which made the case that the superior results of world-class institutions (highly sought graduates, leading-edge research and technology transfer) can essentially be attributed to three complementary sets of factors at play in top universities.

1. High concentration of talent (faculty and students)
2. Abundant resources to offer a rich learning environment and to conduct advanced research
3. Favourable governance features that encourage strategic vision, innovation and flexibility, which enables institutions to make decisions and to manage resources without being encumbered by bureaucracy.

The Challenges of Transforming into a World-class or Service-intensive University

For an institution to engage in the process of evolving policy and actions towards transforming into a world-class or service-intensive institution, two complementary perspectives (external and internal) need to be considered: one, the role of the government at the state level and the resources that can be made available to enhance the status of the institution; two, which is internal, has to do with the evolution and steps that the institution needs to take to transform itself into a world-class institution. I will concentrate on the institutional change that such a university should be contemplating. The following checklist of activities is proposed at the level of an institution, in line with Jamil (2009):

1. How can the institution build the best leadership team?
2. What are the vision and mission statements, and what are the specific goals that the university is seeking to achieve?
3. In what niche(s) will it pursue excellence in teaching and research?
4. What is the target student population?
5. What are the internationalisation goals that the university needs to achieve (with regard to faculty, students, programmes and so forth)?

6. What is the likely cost of the proposed qualitative leap, and how is it going to be funded?
7. How will success be measured? What monitoring systems, outcome indicators and accountability mechanisms will be used?

Let me hasten to note that the above calls for the development of a strategic plan (SP) by the institution to handle the above issues in an integrated manner. The SP is a conscious process by which an institution assesses its current state and the likely future condition of its environment, identifies possible future states for itself, and then develops organised strategies, policies and procedures for getting to one or more of them. The SP seeks to answer the following questions:

- What is this university about?
- What would we like it to be?
- What should that entail?
- How can we get there?

The SP process helps to provide an overview of the institution in an open and transparent way that is often not possible in individual interviews and meetings. It allows leaders to explore current values, missions and goals and to examine them in the context of the current state of the institution, the community, the national economic and political setting, and the international environment. Understanding the current context, existing goals and institutional aspirations marks an important starting-point for thinking about the future. The factors identified above are agents for the formulation of SP for the university to guide the vice-chancellor and the entire system on programme identification and implementation within an identified period. As remarked by Altbach:

> Universities everywhere require leadership and expertise capable of participating in an increasingly complex and globalised world. Universities can demonstrate 'world-class' thinking and policy development in the sense that they employ state-of-the-art solutions to pressing challenges of the twenty-first century. One of these solutions is the development and implementation of a strategic plan. Institutions must 'think' globally without losing sight of their national and local environments (Altbach 2011).

I note herein that it is not possible to elaborate on all the above factors, some of which are probably fairly obvious. However, I would like to examine the following critical factors:

1. High concentration of talent in terms of quality staff and students
2. Funding and funding sources
3. Governance.

On Gaining a Concentration of Talented Academic Staff and Retaining Them

Perhaps the foremost determinant of excellence is the quality of staff in a university. A university aspiring to become world-class must be able to attract, select and retain good staff. The raging debate in the Nigerian university system on the NUC-stipulated requirement that academic staff in our universities possess a doctoral degree is needless, as far as I am concerned. There is no gainsaying the fact that research is central to the functions of a university. Apart from research and innovation being required for the socioeconomic development of the country, the fact remains that it also enriches teaching, another important function. If the situation at the University of Ibadan is anything to go by, the problem varies from faculty to faculty. It can readily be seen that professional faculties such as Clinical Sciences, Dentistry and Law lag behind other faculties. However, through the Consortium for Advanced Research Training in Africa (CARTA) project, more clinicians are now being trained in research, leading to the award of doctoral degrees. This is a preferred response rather than hiding under professionalism in which professional recognition is touted, or, in some quarters, regarded as superior to a doctoral degree.

The scarcity of staff with doctoral degrees in most disciplines, especially those that are science-based, should be regarded as a challenge for a staff development scheme that must look beyond the local institutions to foreign institutions that are ready to engage in staff capacity-building through the operation of mutually benefitting memoranda of understanding. That is already happening in a number of public universities through the funding support of the TETFund. At UI, several academic staff, particularly the young academics, have benefited from MOUs gained through the MacArthur Foundation grant for capacity-building. More than 200 such staff travelled abroad to other institutions to participate in collaborative research capacity-building for periods ranging from three months to one year. It is pertinent to note that they all came back to the university, in contrast to the generally held opinion that such staff usually do not return. Furthermore, some of the staff have helped to catalyse MOUs between the host institutions and the University of Ibadan. The fact of the matter is that the University of Ibadan also has been making deliberate efforts at improving the teaching and research environment to encourage such staff to come back. There is even what the university calls a 're-entry grant' to cushion the shock of inadequate facilities.

Of crucial importance to staff capacity-building is the maintenance of a database of staff and their academic status in the different programmes, so that those programmes that have relatively weak staffing levels in number and quality can readily be identified and given priority in the allocation of training grants. The TETFund has also been helping our institutions to build capacity.

On Gaining a Concentration of Talented Students and Retaining Them

An important issue in this respect has to do with the ability and privilege of a university to select the most academically qualified students. The fact is that admission on the basis of pure merit is not yet the case in the Nigerian university system, most especially the public institutions where admissions into the undergraduate programmes are dictated by the JAMB-prescribed guidelines of Merit (45 per cent), Locality (35 per cent) and Educationally Less Developed States (ELDS) (20 per cent). My take on this is that a policy such as this, desirable as it could have been many years ago when it came into effect, should have been time-bound. In other words, there should have been a gradual transition to the use of merit as the overriding criterion for admission into our university system with the ELDS states encouraged to improve their facilities by matching the quality of others.

Furthermore, the present serious problem of access to higher education in Nigeria has made it extremely difficult for institutions to give places to foreign students, especially at undergraduate level. However, the situation is different at postgraduate level, which I believe we should exploit to attract quality students from far and wide. The research function of a university is enhanced by the quality of its postgraduate students. Actually, most recognised world-class universities deliberately attract international students. For example, Harvard University has a student enrolment that is 19 per cent international; Stanford University has 21 per cent; Columbia University, 23 per cent; the University of Cambridge, 18 per cent outside the United Kingdom and European Union (Jamil 2009).

Of interest is the weight of graduate students in a university. At the University of Ibadan the vision goal is a 60:40 ratio between postgraduate and undergraduate enrolment. Most top universities in the world have a very high percentage of postgraduate students. Furthermore, in the context of funding of public universities in Nigeria, with regulated tuition fees for undergraduate programmes and unregulated tuition fees for postgraduate, universities stand to gain from mounting market-driven postgraduate programmes to alleviate the funding problem in this depressed economy.

On Funding and Funding Sources for Universities

The cost of university education is related to the cost of performance of the basic functions of teaching, research and community service. The pertinent questions to ask in respect of cost are: Are our universities recovering the cost of providing

quality service in the delivery of their educational and training programmes? Do universities have access to sufficient funds to undertake research – basic and applied? To answer these questions faithfully, it must be assumed that our universities have ready figures for how much is needed for each of their programme offerings, and, by extension, a budget that reflects the income and expenditure of the university to perform its assigned functions creditably.

From the analysis of sources of income and the nature of expenditure by universities in the system (Bamiro 2010), the following major sources of income have been identified:

- Government/proprietor allocation
- Tertiary Education Trust Fund (TETFund)
- Student fees/levies
- Endowments
- Grants
- Internally generated revenue (IGR).

Of particular interest is the government appropriation and allocation to universities against their budgets. In years 2005 to 2008, the federal government applied the 'envelope' system of fund allocation. In other words, the allocation had nothing to do with the actual budgets of the institutions, as was the case between 1990 and 2004. Unfortunately, the 'envelope' system led to most institutions not bothering to engage in proper budgeting, as used to be the case. The question that arises is: Were the universities able to cover their shortfalls from other sources? The answer is, unequivocally, no, thereby casting serious doubt on the quality of service delivery. This is what is referred to as 'service-level insolvency' when an institution is unable to provide all services at the required or designed level of quality. However, government, as a result of a series of agitations by the staff unions for increased funding of universities, has been increasing steadily the funding of the institutions. This partially informed the significant increase from 2010, the year after the 2009 negotiations with the unions, and 2012, when the total release of NGN 200.8 billion was almost double the 2009 release of NGN 108.6 billion.

On the Tertiary Education Trust Fund (TETFund) in Nigeria

The Education Tax Fund, later renamed the Education Trust Fund (ETF) and now referred to as the Tertiary Education Trust Fund (TETFund), was established under Act No. 7 of 1993 to engage in projects aimed at improving the quality of education

in Nigeria. Suffice to note that TETFund's normal interventions in the public tertiary institutions are now in the following areas:

- Construction and rehabilitation of buildings and laboratories
- Procurement of teaching and research equipment
- Academic staff training
- Research and book development
- Capacity-building and teacher training programmes
- Provision of ICT infrastructure
- Development of facilities that sustain institutions, such as boreholes, electric power generators, etc.

Noteworthy is the significant achievement of the TETFund in the area of staff capacity-building. Between 2008, when it started, and March 2010, a total of 2,068 junior academics from our HEIs were sponsored for postgraduate studies, distributed as follows: PhD abroad – 206; PhD local – 644; Master's degree abroad – 179; and Master's degree local – 1,039. The staff in foreign universities (located in Malaysia, United Kingdom, United States of America, Canada, South Africa, China, Sweden, Ghana and Japan) were in disciplines that spanned medicine, sciences, technology and law, among others. The TETFund has increased significantly the annual allocation to the HEIs. It is now undoubtedly the main source of funds for capital projects.

Also worthy of note is the National Research Fund (NRF), under the auspices of the TETFund. The NRF took off in 2009 with a special grant of NGN 3 billion. By 2014, less than NGN 1 billion had been committed due to the paucity of fundable research proposals from the Nigerian university system. This changed, however, and the Fund received close to 900 research proposals after the closure of call for proposals early in 2015. This epitomises the changing dynamics of research in our system. We do hope that the present momentum will be sustained through continuous funding of research and the conduct of research that translates to socioeconomic development of our nation-state.

The TETFund and the representatives of the staff unions carried out a survey of the needs of universities for infrastructural development in 2012. The state of infrastructure in our universities was shown to be so bad that the federal government promised to budget close to NGN 1.2 trillion over a period to address the problem. Suffice to note that in 2013 the government made NGN 200 billion available. From available records, this is still to be exhausted, due to poor handling by the universities. In any case, allocation under the needs assessment has become, for now, a major source of funding for our universities over and above

other sources of funding. Most required, however, is seriousness on the side of our universities to articulate areas of need and the faithful utilisation of the funds allocated for them. I look forward to a situation in which every university has a list of prioritised projects geared towards achieving its well-defined vision goals.

Student Fees/Levies

All federal institutions, and a few state universities, are not allowed to charge tuition fees. They are only allowed limited charges/levies for the provision of services, such as accommodation in the halls of residence, sports, a limited contribution to meeting the cost of municipal services (water and electricity), laboratory consumables in science-based programmes, etc. Consequently, undergraduate students registered in the various programmes in these universities end up paying between NGN 30,000 and NGN 80,000 per session, including accommodation. Attempts by federal institutions to increase levies have always met stiff opposition from students, leaving these institutions to make do with whatever can be amicably settled with students. Also, in some states, the determination of tuition fees is a no-go area at the level of the institution; it is regarded as political dynamite.

Of relevance to the issue of fee payment is the appropriate pricing of quality programme delivery. When the cost structure and the resulting cost of educating a student are determined, it becomes relatively easy to quantify any shortfalls and explore ways of meeting them to ensure the universities recover this cost. Be that as it may, the situation for the federal and state institutions is different from that of the private universities.

The private institutions are autonomous. As is to be expected, they depend mainly on fees paid by students for their existence. Fees paid by undergraduates for various programmes in the private universities vary from NGN 300,000 to close to NGN 2 million per session. Professional programmes, such as engineering, law and medicine, attract particularly high fees.

In respect of the significant differences in the fee payments by public and private institutions in Nigeria, Osagie (2009) observed as follows:

> Many education observers are convinced that the aforementioned levels of fees are too high for the average working-class Nigerian to pay. They further express the opinion that it is wrong for there to exist two types of educational systems catering for the rich and the ordinary masses, arguing that it has introduced a class factor into the entire education system in the country. The prevailing condition does represent some form of class problem as high fees result in denial of access for children of the working class and lower middle class.

Osagie (2009) went further to suggest that since, in reality, many private universities were established to provide increased access to higher education, an improvement in the quality of academic standards and a contribution to human resource development, the federal and state governments in Nigeria should offer them grants (for example from the TETFund) to enable them to operate, charge more reasonable fees, and play their role in society by turning high-quality graduates into relevant labour.

Suffice to say that since private institutions depend on tuition fees for their existence, their multiplication will continue to put the spotlight on fees. Fees are a special problem for countries like ours that have made higher education almost free – i.e. totally subsidised by the state. As noted by Daniel and Kanwar (2006):

> Most countries realise they now have to pay attention to fees policy and are gradually introducing fees in the public sector, either because of a conviction that it is more socially equitable or because there is no financial alternative. This puts the private sector on a more level playing field and gives private institutions greater latitude to set fees, which makes them more attractive as investments.

The present imbalance between the fees paid in the private institutions and in public institutions will not augur well for the overall development of higher education in the country to enable the institutions to perform their functions as agents of development. In other words, having relatively free public sector institutions existing alongside expensive private sector institutions does not create an effective higher education system.

Grants

A number of universities have received grants from funding agencies such as the John D. and Catherine T. MacArthur Foundation, Carnegie, Ford Foundation, World Health Organization (WHO), etc. For example, the MacArthur Foundation has since 2000 been supporting four universities in Nigeria – the Universities of Ibadan, Ahmadu Bello, Zaria, Port-Harcourt and Bayero, Kano – in the key areas of staff development, development of ICT infrastructure, etc. The University of Ibadan was awarded a total of USD 6.4 million between 2000 and 2007. The MacArthur Foundation also awarded a total of USD 7.1 million to the universities of Ibadan (USD 4 million) and Bayero, Kano (USD 3.1 million) for the period 2008 to 2010. The award to the University of Ibadan was to enable it to: expand access to higher education by increasing enrolment in its accredited distance learning programmes, from 7,000 to 25,000 students by 2010; equip its

Central Research Laboratory to enable it to conduct top end research; improve staff training; upgrade its ICT infrastructure; and advance library automation. It is pertinent to note that since its emergence in Nigeria in 1989, the MacArthur Foundation has awarded more than USD 91 million in grants to different institutions and causes. The Carnegie Foundation has also given substantial support to Ahmadu Bello University, Obafemi Awolowo University and the University of Jos.

The major experience to share in the operation of these grants is the fact that any institution lucky to have such grants must jealously guard the execution of the projects involved coupled with the meticulous management of the fund strictly in line with the approved budget for the project. The worst case is for an institution to be blacklisted by a funding agency on the grounds of poor financial management; you lose out with one agency, you lose out with all others, because there are not that many and they talk to one another!

Endowment Funds

One of the traditional sources of income generation for universities is an endowment. Endowments come in different forms: professorial chairs, scholarships for students, donations towards programmes of interest to the donors, etc. For example, the Petroleum Technology Development Fund (PTDF) established professorial chairs at six universities – Ahmadu Bello, Ibadan, Port-Harcourt, Nigeria, Nsukka, Uthman Dan Fodio, Sokoto, and Maiduguri – to undertake research relevant to capacity-building in the oil and gas industry. The chairs are being funded in perpetuity using interests generated from the initial NGN 360 million invested on behalf of the six universities (NGN 60 million per university).

Most universities continue to get substantial support from individuals and organisations in different forms, such as endowments, gifts and donations. Several buildings, named after their donors, litter our university system and have been helping such institutions to meet the serious shortfalls in capital funding by government. Several universities have started to establish Advancement Centres with influential board members helping them to raise funds from diverse sources – alumni, foundations, governments, individuals, etc. For example, the University of Ibadan Endowment Fund operated as a separate entity to raise funds and invest as it deemed fit on behalf of the university. It started in 1975 with less than a million naira and then grew the investment fund to close to NGN 1.4 billion in 2009. In 2010 it decided to invest in the construction of an ultramodern 5,000-capacity international conference centre on the university campus.

Internally Generated Revenue (IGR)

Universities have developed different channels to generate funds internally. These vary from the establishment of part-time programmes to consultancy outfits. Actually, federal institutions are expected by the federal government to generate an IGR equivalent of not less than10 per cent of the total allocation by the government. This has led to diverse initiatives by these institutions with conflicting impacts on the performance of their core research and academic functions. As noted by Leigh (2007):

> Many Nigerian universities tried to augment their income through provision of evening and weekend degree programmes at diploma (sub-degree), undergraduate and postgraduate levels. Before the NUC clamped down on unregulated and abuse of these programmes, otherwise referred to as 'satellite campus', many universities had one lecture centre in important cities of the country. The untidy nature of the staffing and delivery of courses made the NUC to restrict universities to their state of location. Up till today many universities make substantial income from their external campuses.

While the regulatory agency has rightly frowned on any institution establishing unsupervised outreach programmes, at least it is an activity that has some element of intellectual engagement. What do we make of institutions that glorify revenue generation through engaging academic staff in the business of bread production and ordinary (or perceived as 'blessed') table water, depending on which institution is involved – ordinary or faith-based? Added to this is the collection of tolls at designated car parks on some university campuses. How does all this compare with universities, such as the University of California, Massachusetts Institute of Technology, etc., which generate significant revenues from royalties that emanate from businesses that have taken up patents derived from the research conducted by these universities or other channels of intellectual property? If knowledge truly drives the globalised world economy, with nation-states looking to their universities for the production of knowledge workers and research-driven innovation to face the resulting competition for the control of markets and resources, surely our Nigerian universities, engaged in the manner indicated above, are not interpreting the signals correctly. It raises the question: What does a university do to generate additional income in a manner that enhances, rather than compromises, its hallowed function as an agent of development and known academic tradition? It boils down to having to revisit the questions: What are our universities for that the country continues to channel its resources into them? And what revenue-generating activities should a university engage in in order not to compromise its hallowed functions?

The Need for a Model of Fund Management in African Universities

For an institution seeking to transform itself into a world-class or SIU, the need to manage resource flow cannot be overemphasised. As earlier remarked, there is a need for an institution to recover its cost of operation if it is to function optimally. The cost-of-service provision by a university is related to the cost of performance of the basic functions of teaching, research and community service. Based on the analysis presented above, and in line with best practices in most properly run institutions, a resource planning model (RPM) is recommended as a very useful tool for the management of resource inflow (income) and outflow (expenditure) in an institution. The cumulated surplus or deficit is determined by the dynamics of the net resource flows. Most significantly, the model provides the mechanism for the evaluation of the impacts of different funding models which, almost invariably, are policies affecting the different income streams as well as the pattern of expenditure. The elements of resource outflows help to measure the overall quality of deployment of resource inflow in the performance of the key functions of an institution. A useful outcome of the RPM is the institution's budget, budget implementation strategy and performance measurement.

It is often said that public universities are not in business and therefore can operate from the viewpoint of less rigorous management practices since they probably cannot run out of business in an atmosphere devoid of performance measures but with guaranteed income to survive. Surely, this is no longer tenable as institutions are now being increasingly challenged to justify the resources being ploughed into them. Thus, in proposing the RPM, one posits that though public institutions are, in general, not in business they must, however, be business-like in their operations, through accounting for and managing resource inflows and outflows in a sustainable manner. The RPM lays emphasis on cost management, income management and scenario-building with the following financial benefits, as established in many universities that have adopted the model:

- Improvements in the revenue profile, collection and administration
- Improvements in expenditure management
- Improvements in the operating position (reserves)
- Improvements in debt management
- Reduction in unfunded liabilities
- Reduction in deferred payments
- Increased financial capacity and long-term sustainability
- Improved capacity for change management.

The Need for Research Management Outfits in African Universities

The role of research management in research funding and partnerships is being gradually appreciated in Nigeria. Popoola (2007) observed that most universities and research institutes in Nigeria, and many others in sub-Saharan Africa, have not developed efficient research management frameworks. A 2009 roundtable on the role of universities in research for development organised by IDRC/WARO in Dakar, Senegal, for university researchers, administrators and development partners, highlighted, among other issues, that university research suffered from a deficit of effective organisation and management (Camara and Toure 2010). Not only is there a lack of vision and an absence of appropriate policy frameworks and strategic planning, but there is also a lack of service culture and the structures required for administering, coordinating and promoting research (Hathie 2010). The essence of the management of research is to create an environment where researchers can conduct their research without institutional bureaucratic barriers. For this to occur, an effective management style is a prerequisite, through which researchers are empowered and supported to be successful in their research.

In most Nigerian universities, research administrative activities have consisted of the financial management of grants, ethical review of proposals by the Institutional Review Committee, and the training of researchers in research methodology and data management. These activities are usually conducted independently of each other and there is no designated RMO charged with the duties of overall coordination. In some institutions, special arrangements for the administration of specific grants from international organisations such as the MacArthur and Carnegie foundations exist. However, these facilities are usually not extended to research grants from other sources. Generally, researchers in most Nigerian academic institutions have sourced funding and conducted their research activities in isolation, with minimal administrative support.

Similar to the experiences of other African universities, there is usually no laid down research agenda for national and globally relevant research. Thus, research is not centrally driven and institutional research partnerships are not actively sought. Consequently, the accrual of institutional benefits from such individual research activities is limited and short-lived. Increasingly, researchers are coming to terms with the reality and the strength of partnerships. Kirkland (2006) observed that research managers in one country are actually interested in the activities of another's. Indeed, international collaboration is increasingly a source of funding, but it requires planning, contacts and organisation. Strategies to stimulate and sustain partnerships are therefore germane to accessing research

funds for sustainable development. An RMO is central to the realisation of all these activities (Studman and Tsheko 2007).

In line with international standards, it is essential that African universities develop structured and coordinated approaches to research and research management through the establishment of a research administrative infrastructure for the central coordination of research activities. It is pertinent to note that a few Nigerian universities are now trying to establish such units through the support of the Association of Commonwealth Universities (ACU). ACU has been instrumental in the establishment of the West African Research and Innovation Management Association (WARIMA), with headquarters at the University of Ibadan, to promote research and innovation management in the West African sub-region.

On governance systems in universities

The challenges posed by the situation in the Nigerian university system, as partly articulated earlier, put governance at centre stage of achieving the goals of transforming our universities. There is no gainsaying the fact that it calls for management systems that:

1. Appreciate what goals the university should be pursuing
2. Appreciate the state of the university in relation to the implementation of the action plans and strategies to achieve the goals
3. Can attract and properly manage resources towards the performance of the fundamental functions of a university.

I put the governance of a university squarely on the shoulders of: one, the vice-chancellor, as the chief accounting officer together with the supporting principal officers; and two, the pro-chancellor, chairperson of Council and members of the governing council – external and internal.

Let us take a critical look at the governing councils of federal universities. The current membership, as contained in the military government decree of 1 January 1993, which amended the Acts of Nigerian Universities, and even in the Autonomy Bill of 2003, is as follows:

> The Council of any university shall consist of:
>
> a) the pro-chancellor;
> b) the Vice-Chancellor;
> c) the Deputy Vice-Chancellor (Deputy Vice-Chancellors in the 2003 bill);

d) one person from the Federal Ministry responsible for Education;
e) four persons representing a variety of interests and broadly representative of the whole Federation to be appointed by the National Council of Ministers;
f) four persons appointed by the Senate from among its members;
g) two persons appointed by Congregation from among its members;
h) one person appointed by Convocation from among its members.

Thus, the membership of councils is tilted in favour of internal members. The external members – six in number, representing various interests – are government appointees with no input from the universities on their appointments. One of the external members is appointed by government as the pro-chancellor and chairperson of Council. The federal universities witnessed five different governing councils between 2000 and 2009, despite the fact that each council was expected to operate for four years. The fact is that, for one reason or the other, the federal government has been involved with system-wide truncations of the tenures of these councils, with the council appointed in February 2009 dissolved in November 2011 and brought back in February 2012 to complete its term. While all this is symptomatic of an unstable system, all is not well in terms of quality and calibre of some of the people appointed into councils by the federal government from time to time, to the extent that His Highness, Alhaji Ado Bayero CFR, LLD, JP, the late Emir of Kano and the Chancellor of the University of Ibadan, in his address at the 2011 Convocation Ceremony stated as follows:

> May I plead with the Federal Government to please reconstitute these councils with men and women of honour and integrity, who are keenly interested in the development of our universities. This is more so extremely important at this time of academic Webometric ranking, so that globally, our universities will be ranked among the world best.

If the truth must be told, most universities have not been lucky with the calibre of people appointed by government into their councils. However, at the University of Ibadan, I can say categorically, without any fear of contradiction, that available records show the excellent performance of the Felix Ohiwerei-led Council and the Gamaliel Onosode-led Council that succeeded it. It was the glorious period of about seven years when the foundation for the re-emergence of Ibadan as a twenty-first-century university was laid by the Ohiwerei-led Council through the articulation, among others, of the vision and mission of the university. The Onosode-led Council that followed evolved and started to implement the strategic plans for achieving the university's vision goals.

The two gurus of the private sector – Felix Ohiwerei and Gamaliel Onosode – brought their culture of excellence and ethical orientation to set the moral tone for the purposeful management of the university. While some universities also have been lucky to have experienced and focused leadership, some others have not been as fortunate, particularly with some of the governing councils. So many avoidable problems beset the system at the time that one could not blame the federal government for dissolving them, thereby throwing away both the good and the bad. What does one make of a governing council at loggerheads with the vice-chancellor over contract awards, to the extent that the Honourable Minister of Education had to call the two parties to Abuja? Or a university where the pro-chancellor took over the chairmanship of the Appointments and Promotions Committee for academic staff? In contrast, there is an interesting case of a council struggling to provide positive leadership in spite of clashes with the vice-chancellors and the unions. In the area of staff appointment and promotion at a state university, the council, in the process of exercising its right to approve the appointment and promotion of staff, was at loggerheads with the unions and the vice-chancellor. The Chairman of Council (anonymity preferred) noted as follows:

> For a start, it is clear that the final decision on appointments and promotion of staff in any university rests with its Governing Council. Given what we met on ground and the need to sanitise the system, the council has decided that recommendations for appointments and promotions should come before it for consideration and approval. In the process of doing this, the council has discovered many flaws, inconsistencies and gross contradictions in several of the recommendations brought from the Appointments and Promotions Committee headed by the Vice-Chancellor.

Having commented on external members of Council, let us direct our searchlight on the internal members. Honestly, this is another sorry tale of hit or miss, in terms of quality of leadership expected at that level of governance. While some internal members came to Council imbued with leadership qualities and commitment to the development of the system, a number had no business being in a university, not to talk of being in Council. They were just squarely politicians pursuing, in most cases, the narrow interests of their sponsors. This is not unconnected with the fact that internal members are, in the majority, against international convention. As remarked by Falase (2010), the former vice-chancellor, University of Ibadan (2000–2005) at his valedictory lecture delivered in January 2010: 'A Council with this composition is obviously not in a good position to take an independent view of the affairs of its university. Such a Council will be more concerned with internal politics.'

Furthermore, with councils now given the power to appoint and fire vice-chancellors, under the present university autonomy, the election of internal members to councils is now almost a do-or-die affair. Anybody aspiring to the position of a vice-chancellor or deputy vice-chancellor better be in the good books of the emergent cabal that is in a position to extract promises from candidates they have chosen to support. However, if the history of caucus-backed leadership is anything to go by, the system should be getting ready for leadership that will be putting political consideration above the common good. But let me also say, based on personal experience, that any vice-chancellor who is honestly committed to moving his or her university forward, has enough instruments, within the system, to operate and achieve the institution's vision goals, assuming there are such collectively defined goals. However, as I mentioned earlier, it will call not for momentary courage but an everyday courage in taking decisions that are for the good of the system. After all, that is part of what leadership is all about. It is gratifying to note that this is the case in some universities.

On the Changing Dynamics of Staff Unionism and its Efffects on Universities

A very disturbing symptom of poor governance in the Nigerian university system, particularly in the public universities (federal and state), is the historical evolution and changing dynamics of staff unionism. The university system can now boast four staff unions – the Academic Staff Union of Nigerian Universities (ASUU), the Senior Staff Association of Nigerian Universities (SSANU), the National Association of Academic Technologists (NAAT), and the Non-Academic Staff Union of Educational and Associated Institutions (NASU). Over the years, ASUU embarked on a series of strikes in order to force government to the negotiation table. ASUU went on strike at the national level for a total of 186 weeks between 1993 and 2018 .

It is pertinent to note that the seeds of the ASUU strikes were sown in 1981 when the first agreement with the federal government was signed with a plan to review it after three years. This was not fully implemented, leading to the subsequent series of strikes and other agreements in 1992, 1999, 2001 and 2009. Added to the national strikes by ASUU, in pursuit of issues that were considered national and which affected the entire university system, was the series of local strikes in pursuit of one local issue or the other at the institutional level. My concentration on ASUU is deliberate. As I have always asserted, if ASUU gets it right, other unions will have no alternative.

This is not a blaming exercise, as the concern herein is how governance, involving all the stakeholders, is impacting on the system. It is important that I

make this point as I expect not a few to rush to reel out the achievements of the past struggles in bringing positive changes to the system. At a recent meeting of the pro-chancellors of state universities, a member eulogised ASUU as the architect of the current inflow of funds arising from the needs assessment conducted by the TETFund some time ago. This, I do not doubt. But I ask, at what cost to the system? Strikes have really inflicted serious damage on the entire university system in Nigeria. The twelve-week strike of 2009, for example, destabilised the University of Ibadan. We were pained by the cancellation of the staff exchange programme between the university and a sister university in South Africa. A group of students intending to train at that university had to abandon their trip at the peak of the strike, causing serious disruptions to their programme. Also, the image of an unstable university system in the country worked seriously against the University of Ibadan when we were competing for the location in our university of the Earth and Life Sciences Hub of the newly established Pan African University (PAU) by the African Union. Thank God that we won, but we had to promise that the programmes, which were to attract postgraduate students from across Africa, would be insulated from strikes. But were they? No, no, no, to the chagrin of those who supported the university! It is inconceivable that any university can contemplate becoming world-class through internationalisation involving the building of partnerships for research and staff development in an environment characterised by an unstable academic calendar.

That unionism has complicated university governance is attested to by the memoirs of a few former vice-chancellors. A 2010 publication by Prof. Roger Makanjuola, the former vice-chancellor of Obafemi Awolowo University, is titled, *Water Must Flow Uphill: Adventures in University Administration*. I believe the title is a serious pointer to what he had to say in the book, which, without being a hired promoter, is a must-read by heads of institutions. But the present situation need not be!

The above serves to accentuate the serious challenges we face in bringing sanity to the system without which all talk about universities becoming agents of development will be an exercise in futility. But we must also shine light on the government itself, a key stakeholder. Unfortunately, there has been so much instability in the leadership at the level of the Federal Ministry of Education. For example, as the vice-chancellor of the University of Ibadan between 2005 and 2010, I interacted with five ministers of Education! Little wonder the policy somersaults in the sector, particularly in relating to the university system. As remarked by Falase (2010):

> Majority of the strikes, financial and other problems of the Universities are traceable to Government who routinely by-passes the Management and Governing Councils to issue all sorts of instructions in form of circulars to the Universities, most of

> which are inappropriate, un-implementable and contrary to the laws setting up the Universities. In many cases, financial awards to staff arising from union agitations are not cash-backed and this leads to further protests on campuses, more debts for the Universities, closures and distortion of university calendars from prolonged strikes. Invariably when trouble arises because of these instructions (circulars), the fallout is dumped on the laps of the Vice-Chancellors who are asked to 'go and sort it out'. The Vice-Chancellors are therefore in precarious positions as they are caught in the middle of Government and union battles. Often, the Vice-Chancellors' decisions or actions during such periods are perceived as hostile by their unions, making them extremely unpopular with the staff and students.

Suffice to note that we will have to go back to the drawing board to evolve a more stable and responsive governance structure for the Nigerian university system, if the system is not to gradually slip into irrelevance. Towards such an exercise, let me quote a statement from a 1997 South African White Paper titled 'A Programme for Higher Education Reform', referred to by Falase (2010):

> Councils are the highest decision-making bodies of public institutions. They are responsible for the good order and governance of institutions and for their mission, financial policy, performance, quality and reputation. To sustain public confidence, Councils should include a majority of at least 60 per cent of members external to the institution. Councils ought not to be involved in the day-to-day management of the institutions as that is the responsibility of the executive management led by the Vice-Chancellor, Rector or Principal, who is in turn accountable to the Council.

On Tackling the Challenges of Staff Development in Universities

The rapid rate of establishment of universities in the past few years has put a lot of pressure on the university system in terms of quantity and quality of staff. The staffing situation has posed a serious challenge to the quality of programme delivery. Of interest is the quality and quantum of available staff as well as the mix, based on the following categories: professorial cadre (professors and reader/associate professors), senior lecturer cadre and lecturer cadre. There were 25,065 full-time academic staff in the Nigerian university system in the 2008/2009 academic session, comprising federal – 15,569 (62.1 per cent), state – 7,019 (28.0 per cent) and private – 2,477 (9.9 per cent). The professorial cadre (professors and reader/associate professors) constituted 18.2 per cent, the senior lecturer cadre 21.8 per cent, while the lecturer cadre was 60.0 per cent. The system had 571 foreign staff, with the private universities accounting for half of them. Foreign staff came mainly from the United States of America, United Kingdom, India, Eastern Europe (mainly Poland and Hungary), Turkey and Africa (mainly Ghana,

Egypt and Cameroon). Identified in the system also were 939 visiting professors and staff on sabbatical leave. Unfortunately, the figure was not broken down between visiting professors from outside the country and those on leave from other Nigerian institutions. Suffice to note that visiting professors from outside the country would probably be at most 20 per cent.

Based on the NUC-stipulated student-teacher ratio for the different programmes run in the system (varying from ten to fifteen for science-based programmes and thirty for programmes in the humanities and social sciences), the Commission estimated that the Nigerian university system had a shortfall of close to 5,000 academic staff in 2008/2009, a situation that, as to be expected, impacted negatively on the quality of delivery of some of our programmes. It was also a situation that called into question the continual approval of new universities – public or private. 'Massification' of higher education is a worldwide phenomenon aimed at improving the age participation ratio. However, we must be ready to tackle the serious challenges it poses, most especially the quality assurance of the delivery of our programmes.

Staff development is critical in the operation of any institution to achieve quality programme delivery. Staff development takes different forms: support for junior academics to undertake research leading to the award of a postgraduate degree; sponsorship of staff under linkage programmes to other institutions for general exposure to teaching and research; attendance of conferences (local and overseas); participation in professional training courses, particularly by technical support staff, etc. Most universities rely on funding agencies and IGR for financial support. It is only from 2010 that the TETFund created a window for staff development through the allocation of close to NGN 50 million per session per university for staff development.

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3

Aare Emmanuel Afe Babalola: An Astute Advocate, Passionate Educational Administrator and Prudent Entrepreneur

Biographical Profile

Born on 18 October 1928, Chief Emmanuel Afe Babalola attended elementary school in Ado Ekiti, Nigeria, between 1938 and 1945, where he obtained his Standard Six certificate. That was as far as he could go in terms of formal, institutionally based, early education because his parents could not afford to sponsor the rest of his education. Through private correspondence, he studied for the University of London GCE Ordinary Level and passed six subjects in 1952, while working as an elementary school teacher. He passed four subjects in the GCE Advanced Level in 1953 and then enrolled for a BSc (Economics) at the University of London as an external student. He obtained his degree in 1959. Not satisfied with this achievement, Babalola went on to enrol for a law degree at the same university, still as an external student, and achieved an LLB (Hons) in 1963. He moved to England and became a barrister at law at Lincoln's Inn.

Chief Afe Babalola started legal practice in Nigeria the following year, and by 1987 he had become a Senior Advocate of Nigeria (SAN), the highest attainable rank in the legal profession. He was made a Fellow of the Federal Polytechnic, Ado Ekiti, in 1997 and Fellow, College of Education, Ikere Ekiti, in 1998. He was conferred the national award of the Officer of the Order of Federal Republic of Nigeria (OFR) in 2000, was honoured with the Distinguished Fellowship of the Nigerian Institute of Advanced Legal Studies in 2002 and was made a

Commander of the Order of Niger (CON) in 2007. He was awarded numerous academic honours, including Doctor of Law *honoris causa* by the University of Ado Ekiti in 2000; Doctor of Letters *honoris causa* by Kogi State University in 2012; Doctor of Law *honoris causa* by the University of Lagos in 2013; Doctor of Law (LLD) h*onoris causa* by the University of Jos in 2013; and Doctor of Law (LLD) *honoris causa* by the University of London in 2015.

Chief Babalola is a distinguished member of a number of professional associations, including: the Nigerian Bar Association; member, International Bar Association; former distinguished member of the Body of Benchers, the highest body of legal practice in Nigeria; former member of the Legal Practitioners Privileges Committee; former president of the Institute of Arbitrators of Nigeria; and former member of the Judicial Service Commission of Ekiti State, Nigeria. He is a trustee and patron of Transparency International, Nigeria Chapter. He was the first chairman of the Board of Governors of Federal Polytechnic, Ado Ekiti. He was appointed an adjunct lecturer in the Institute of Advanced Legal Studies, Lagos in 1989; adjunct lecturer in the Centre for African Law Development in Lagos; visiting lecturer, Faculty of Law, at the University of Ibadan; and has been a lecturer in the College of Law, Afe Babalola University, Ado Ekiti, since its inception. He has trained over 1,000 lawyers in his chambers, many of whom have become senior advocates, judges in different courts and attorneys-general in several states across Nigeria and at the federal level.

Chief Afe Babalola won the Best Pro-chancellor Award in Nigeria in 2004 and 2005, and was the chairman of the Committee of pro-chancellors of Nigerian Universities between 2005 and 2008.

Contribution and Donation to Educational and Professional Causes

Chief Afe Babalola influenced the establishment of the Federal University of Technology, Akure, and the transfer of the Federal Polytechnic from Akure to Ado Ekiti. He contributed generously to the infrastructure development of the permanent site of the Federal Polytechnic, Ado Ekiti. He also donated substantial sums to the construction of the Faculty of Law building at the University of Ado Ekiti, and to an ultra-modern auditorium in the same faculty in 2004. While pro-chancellor of the University of Lagos, in 2006 he provided an auditorium at the university. In addition, he facilitated the construction of the Nuclear Medicine building at University College Hospital (UCH), Ibadan, and donated a building to the African Heritage Library in Olorunda-Abaa village in Ibadan.

As part of his contribution to the upliftment of the legal professional association, Chief Afe Babalola paid for a Bar Centre to the Nigerian Bar Association (NBA), Ibadan branch, and one for NBA, Ado Ekiti branch. He has awarded and continues to award numerous scholarships to students in higher institutions across Nigeria.

> Since 1967 Chief Babalola has been a regular columnist in prominent newspapers in Nigeria such as *Sketch*, *Nigerian Tribune* and *Vanguard*. He has maintained a regular column titled 'You and the Law', where he has given his opinions on important issues in law and sustained intellectual arguments on points of law. Among the law books he has written are: *Injunctions and Enforcement of Orders; Law and Practice of Evidence in Nigeria; Election Law and Practice, Vol.I; Election Law and Practice, Vol. II; Enforcement of Judgments.* For the benefit of educational administration, he has published: *University Administration in Nigeria – The Role of University pro-chancellors and the Governing Council.* To mark the tenth anniversary of becoming a SAN, a book was published in his honour titled: *Legal Profession and the Nigerian Nation – Essays in Honour of Chief Afe Babalola, FFPA, SAN.* Chief Afe Babalola has delivered over 500 public lectures across the globe.

Contributions as Pro-chancellor of the University of Lagos (UNILAG)

Chief Afe Babalola was appointed the pro-chancellor and chair of the Governing Council of the University of Lagos in 2000 when the university was going through a turbulent time. According to him, 'Up till the time of my appointment, the University of Lagos was called all sorts of names, such as "UNILAG Plc". The university was notorious for many irregularities, cultism, corruption and the likes.' He saw his appointment as a challenge and an opportunity to improve a public educational institution in his country. He told me:

> In my first council meeting, I told other council members that there was a gigantic duty to perform and which must be performed well. I told them areas I wanted to address, which included punctuality, transparency, accountability and restoration of confidence in the university. The quality of education in the university, the polarisation of the university community and the award of contracts were other areas which called for immediate attention. I made it clear that I was not going to be a figure head or a 'visiting' pro-chancellor which was the order of the day in our universities. The law vested the property, finance and discipline of the staff and students of the university among others in the council, and with the support of the members, we should be able to effect positive changes.

Hitherto, the position of the pro-chancellor of a Nigerian university was seen as a reward for political loyalty by the extant government. Incumbents would visit the university at intervals on invitation by the university management, were lodged

in luxury apartments with their families and collected generous allowances. Chief Babalola rejected all the associated appurtenances and privileges and opted for service. In fact, he turned over his allowances to the university coffers for the improvement of the university.

> Fortunately, I had very sincere, honest and patriotic Council members who also shared my views. I set up different committees to look into each area of complaint and there were many. I invited members of the university community to forward to me letters of complaints and protests and they came in torrents both from within the university and outside. They were looking for a messiah who would correct the ills and obtain justice for those whose rights had been trampled upon. The committees worked almost day and night for about six months. There were many complaints ranging from dismissal or retirement without good cause to recruitment of unqualified people or relations, promotion based on considerations other than merit, irregular admission or racketeering, irregular allocation of staff quarters, unauthorised purchase of library books or purchase of books from non-existing and fictitious bodies and booksellers.

In pursuit of excellence and in reviving the long-lost academic tradition in the university, Chief Babalola embarked on an unusual style of administration in the institution.

> I addressed the Senate, even though some people felt it was not my duty to do so (and really it was not). But my interest in the academic quality of the university made it imperative that I discuss with them. In spite of the fact that there was opposition to my meeting with the Senate, I received an enthusiastic response from them. After my address, members of the Senate lined up to shake hands with me to congratulate me. They wanted a change.

Such was the unusual style of interaction with members of the university community that earned him the support and confidence to make a change in the university that it has become a reference point in other universities for the difference good leadership can make to improve the situation in Nigerian university campuses, where academic culture and tradition have become degraded.

After the initial investigation of various allegations of misconduct against the university management and other key officers of the university, the vice-chancellor of the university was removed, some members of staff were charged for misconduct, some were dismissed, while others were retired. Eventually, sanity was restored to the university while fresh efforts were made to appoint a new vice-chancellor and other key management staff.

> Thereafter, the Council moved ahead and notable achievements were made in many areas, including but not restricted to the following:
>
> 1. Banning of the sale of handouts;
> 2. Removal of all unauthorised buildings and structures especially those which did not comply with the original master plan of the university;
> 3. Reduction of corruption and
> 4. Reduction in the polarisation of the university community to the barest minimum. The council also took steps to eradicate cultism and throughout our tenure, there was no report of cultism. We brought back students who had been rusticated or suspended for cultism and made them watchdogs over themselves and other cult members. Their parents were also made to sign undertakings for the good behaviour of their children. Therefore, the notorious scourge of cultism in the university was wiped out or at least drastically reduced.

The university council chaired by Chief Afe Babalola also took a swipe at industrial unions on campus, which were in the habit of declaring incessant industrial action, which often paralysed academic activities at the university.

> Again, our council stoutly opposed strikes. I made it clear that a university lecturer was employed to do two things: to teach and conduct research. The lecturer's pay, I contended, was for both teaching and research. The claim by lecturers that they were entitled to receive their salary even when they did not teach on the ground that they were engaged in research was fallacious and unjustifiable. At best, they were only entitled to part of their salary for research work. But since the salary was for both research and teaching, there was no way the lecturer could quantify the research work done. Thus, any money received over and above money due for research work would be money paid for work done which was nothing but stealing. Most senior members of the staff agreed with me. We got the most senior lecturers to opt out of Academic Staff Union of Universities (ASUU), but the junior ones were adamant and intransigent. Throughout our tenure when the university was in session, members of staff of the university did not join ASUU strike. We also applied the principle of 'no work no pay'. Our university was therefore one of the few institutions where courses were completed on time while others spent eight years for a four-year course.

Chief Babalola became the Council chairperson at a time when the university desperately needed physical infrastructure. Since the inception of the university in 1962, the student population had risen from 4,000 to 40,000, yet the facilities had not increased to match the growing number. For example, hostel accommodation had remained the same in terms of bed space, teaching facilities had deteriorated, while the road network in the university had become dilapidated.

> I decided to approach my clients, friends and other well-wishers to assist the university. One of them, Julius Berger Nigeria Plc, built an ultra-modern auditorium for the Faculty of Engineering, which is one of the best in the country. Others donated materials and equipment. Ericsson donated over Six Hundred Million Naira worth of electronic gadgets while others built hostels. I decided to institute an endowment fund and we got over Two Billion with promises and pledges for future donations worth Five Billion Naira. Later, contributions including buildings and Build, Operate and Transfer (BOT) projects increased the endowments fund to over 20 Billion Naira.

One of the innovative ideas Chief Afe Babalola adopted to boost endowments to UNILAG was to invest the endowment funds. The returns from the investments were used to award scholarships and bursaries to indigent students. To tackle corruption in the university, Chief Afe Babalola explained:

> We prepared new guidelines for award of contracts, employment, and promotion. Hitherto, the university used to pay mobilisation fees to contractors ranging from ten to sixty percent. I found that such practice usually resulted in poor execution of the job if performed at all and we avoided it as we avoided taking kickbacks. On transparency, some of us (Council members) including myself, did not take our entitlements, not even sitting allowances. I did not sleep in the pro-chancellor's lodge throughout and I paid all my hotel bills which I also did not claim from the university.

The sacrifices made by Chief Babalola's Council were duly recognised by the relevant authorities through various awards. Babalola said:

> It was not a surprise to me when the National University Commission, in an evaluation exercise carried out on its behalf by a committee which included foreigners, stated that I was the best pro-chancellor, my Council the best, University of Lagos the best and our Vice-Chancellor the second best in the country. I was given an award of N500,000. 00, which I turned over to the university. The following year, I was declared the best pro-chancellor again. This time around, my Vice-Chancellor, Prof. Oye Ibidapo-Obe was also declared the best Vice-Chancellor in the country and the university was also declared the best university in the country.

Student discipline ranked among the greatest achievements of Chief Babalola's Governing Council. He explained:

> In the past, when government officials visited our university, students would demonstrate and sometimes be unruly. During the 40th Anniversary Convocation ceremony of the university, the Visitor, President Olusegun Obasanjo attended. He went round the university and spent over five hours inspecting the development

> projects and the improvements we had made. He was quite impressed particularly with the commendable satisfactory behaviour of the students. They welcomed the President warmly. The graduating students maintained decorum and they remained on their seats until the convocation was declared closed before they left the hall.

Over a period of six years, there were no reported cases of cultism or cultist activities among the students of the university because of the decisive disciplinary measures put in place by the management and council of the university. In the same vein, between 2002 and 2007 there were no strike activities by the staff of the university that could interrupt academic activities. The students were therefore kept busy and concentrated on their studies because of the regular university calendar.

Another notable achievement by Chief Afe Babalola while he was pro-chancellor of UNILAG was his crusade for screening and retesting candidates forwarded to universities by the Joint Admission and Matriculation Board (JAMB). It was noted that the quality of students who were progressed to university by the central admission body had depreciated and this reflected in the academic performance of undergraduates across the country. This led some people to call for the scrapping of the JAMB so that each university could conduct its own admission tests. The other option suggested was that each university should be allowed to conduct a further test to sieve out the best candidates among the applicants recommended by the JAMB. Eventually, government favoured the second option advocated by Chief Babalola's group and hence, it became the norm for universities to conduct further tests for applicants before they were admitted.

Chief Babalola also advocated for a system of gradated fees in higher institutions in Nigeria, whereby students from a rich background would be charged more than their colleagues from a poor background. However, the modalities for this system were neither worked out nor implemented before his tenure as pro-chancellor expired.

Afe Babalola University (ABUAD)

The Afe Babalola University (ABUAD)was founded as a non-profit private university in Ado-Ekiti, Ekiti State, Nigeria by Chief Afe Babalola, who felt he needed to bring his experience in university administration to bear by establishing a model university and thus contribute to educational development in Nigeria. The university began academic work on 4 January 2010 as the first in Nigeria to start its academic year on its permanent site with all the state-of-the-art facilities in place, all within a period of about eight months after the sod-turning. By that time, the university had completed an attractive wall fence and gate, a network

of good dual-carriage roads, sports facilities, magnificent colleges and hostel buildings, modern cafeterias, a large auditorium, seventy-eight lecture halls, forty-three lecturers' offices, four lecture theatres, an e-library, ICT facilities, modern laboratory equipment, academic and physical libraries, interactive electronic boards, solar-powered lights, central sewerage systems, a printing press, bakery, laundry, water bottling processing plant, and so on. These facilities have since multiplied since the inception of the university.

The university was established to pioneer total excellence along the parameters of character moulding, teaching, research, sports, community impact and scholarship. The university has been acknowledged by the National Universities Commission (NUC) as 'a model and reference point to other universities', according to the university's brochure. In 2011, it won an award from the European Business Assembly in Europe as the 'Best Enterprise in Africa for 2011'. The Nigerian Students' Union voted the university the most dynamic, most progressive and most beautiful university in Nigeria, while the African Students Union based in Ghana voted the university the fastest growing in Africa. It went further to vote the founder as the African Man of the Year, 2011. Former Nigerian president Olusegun Obasanjo, former military head of state General Yakubu Gowon, and the Chairman of the Independent Corrupt Practices Commission (ICPC) in Nigeria, Hon. Justice Oluyinka Ayoola, who is also a former Justice of the Supreme Court, led a fourteen-man team of the ICPC to Afe Babalola University in 2010 to acknowledge the university as a model and pace-setter in reviving quality education in Africa.

The university has won numerous awards since it opened. Among these are:

1. The Most Dynamic, Progressive and Fastest Growing University in Nigeria (awarded by the National Association of Nigerian Students, 2011).
2. Best Private University in Nigeria (awarded by the National Association of Nigerian Law Students, 2012).
3. Award for Selfless Contribution to the Growth of Education in Nigeria (awarded by the Students' Union Government, University of Jos, 2012).
4. European Quality Award for Afe Babalola University (awarded by the International Corporation of Social Partnership, Oxford, 2012).
5. The Best University in Nigeria Award (awarded by the Nigerian Female Students' Association, 2012).
6. The 2nd best private university in Nigeria and 13th best university in the country (ranked by the Webometric world ranking body in February 2013).
7. The Zik Prize for Humanitarian Leadership (June 2014).

One of the most acknowledged strengths at ABUAD is its institutional commitment to innovative agricultural education. This refers to a systemic integration of agriculture into teaching, research and training. The three pillars of innovative agricultural education are agricultural research, practice-based learning and stakeholder engagement.

With about 1,000 hectares of farmland impeccably apportioned for farming, fishery, processing and packaging, the ABUAD farm currently boasts 110,000 mango trees, over 500,000 teak trees, over 500,000 gmelina trees, 500,000 moringa trees, and many hectares of cassava, maize, yam and soya bean. The university has 50 huge lakes each containing 50,000 fish and 86 ponds each containing 5,000 fish. To ensure their sustainability, a hatchery produces fingerlings while another complex on the farm houses the post-harvesting of the ponds. The farm also has a feed-mill, a moringa factory that produces seven products (capsule, leaf powder, body butter, hair cream, tea, seed and oil), and farms pigs, snails, mushrooms, guinea-fowl, turkey, quail and honey, among other products.

Also, ABUAD recently commissioned its university teaching hospital, a state-of-the-art and magnificent institution, comparable to the best in the world. Very recently, Aster Hospital, Dubai, the largest hospital in the Middle East, entered into a strategic partnership with ABUAD to provide high-level medical facilities and support in the areas of maternal care, laparoscopy, emergency surgery, orthopaedics, liver care, and more. It is the first university in Nigeria to own telemedicine equipment.

Thoughts and Reflections on Higher Education in Africa

Below is a presentation of Chief Afe Babalola's thoughts and reflections on higher education and society in Africa, gleaned from personal discussions with him and from excerpts from his writings and some of his presentations at important education events across the world.

Philosophy on Higher Education

The aim or purpose of education at any level and more importantly at the university level is to improve learning and also to mould character. A society that is interested in and concentrates only on learning at the expense of character is one that is bound to falter over time. As a matter of fact, character itself aids and accentuates learning, whilst learning on its own is empty without character. It is for this reason that university certificates are issued only to people who have been found deserving of it in terms of learning and character. This is a carryover from

ancient times when the first universities were established by religious organisations or orders. At that time much emphasis was placed on morals. To a large extent, the universities of today have tried their best to remain true to this ideal.

Higher institutions must benefit the immediate community of the institutions. They must have a direct impact on the lives of the community and improve their living conditions and existence. The research they do must be focused on improving the existence of people and on how they can use local resources to better their lives. We try to demonstrate this in ABUAD by concentrating on agriculture, which is the mainstay of the people in the region, and technology. We are developing improved seedlings for farmers to boost their crop yields. We have also instituted rewards and annual awards for farmers to motivate them. Our College of Engineering aims to develop appropriate technologies for agriculture and other technology that will increase farmers' yields and benefit the local people directly in other endeavours. Our College of Medicine will centre on improving the healthcare of the community and conduct research that will alleviate local diseases and ailments.

How does Education Affect Development?

Without doubt, any country that aspires to greatness in any sphere of its existence must ensure that education remains of paramount importance. In realisation of this, the Constitution of the Federal Republic of Nigeria 1999 (as amended), in Section 18, enjoins the government to ensure that there are equal education opportunities at all levels and that the government shall strive to eradicate illiteracy. Even though the provisions of the said section and others like it that fall under the Fundamental Objectives and Directive Principles of State Policy, as contained in Chapter II of the Constitution, have not been enforceable in a court of law, their inclusion in the Constitution leaves no room for doubt that the government is expected to be guided by the ideals contained in the provisions of the section.

Researchers the world over agree on the fact that education plays an important role in development, the only area of disagreement being the measure of its effect. Studies have shown that the ability of the United States to develop faster than Europe in recent times can be attributable to better funding of higher education in contrast to that in Europe. Whilst the US devoted about 3 per cent of its Gross Domestic Product (GDP) to education, the countries of the European Union devoted about 1.1 per cent. Similarly, in the thirty years after World War II, Europe developed faster than the US as a result of increased funding of primary and secondary education. Furthermore, the ability of many Asian countries (of

which South Korea is most notable) to join the league of developed nations has been attributed to their high funding of primary and high school education.

The US, Europe and Asia recognise the connection between education and development, hence the conscious effort to pay attention to matters involving education. Imagine what life would be like should there be any dysfunction in this very important process of knowledge acquisition and transfer. Imagine what the world would be like in a hundred years' time if, somehow, the knowledge that we possess today was not successfully transmitted to future generations of humans who inhabit Earth by, say, 2118? How would they transport goods and services across the vast oceans and land masses? Would diseases such as smallpox, which have been virtually eradicated, not have resurged? In Nigeria, would our country have developed to the extent that the lamentations that are currently the order of the day have disappeared? In simple terms, what would the world, and Nigeria in particular, be like if there were a complete failure of the educational system? For an answer, we do not need a crystal ball. We need only look back at what the world and Nigeria were like before the advent of modern educational systems and institutions. In so doing, we can appreciate the roles that education has played and continues to play, not just in development in Nigeria but also in human development as a whole.

Education and Technological Advancements

The invention of the wheel brought development to mankind. There have been numerous other scientific or technological breakthroughs since then. In the Middle Ages some considered that the Earth was flat and that if one sailed far enough one was bound to fall off the planet. So entrenched was this belief that it was considered heresy to hold a contrary opinion. Many were burnt for holding such opposing views. This debate raged on among scholars of the day and to a large extent accounted for the numerous expeditions that were undertaken to explore the Earth. This led to the discovery of hitherto unknown lands and greatly facilitated commerce amongst the people of the Earth.

In the sphere of technology, the closing stages of the nineteenth century and the first part of the twentieth century were most kind to humans. Nikolai Tessler, whose idea of alternating current was initially a subject of ridicule, is today acknowledged as the father of modern civilisation. The invention of the airplane by the Wright Brothers ensured that people could fly despite the early criticism of the idea. William Goddard's idea of space travel through rocket science, an idea he pioneered in the early part of the twentieth century, was scorned by an editorial of

The New York Times. However, when the United States placed a man on the moon 50 years later, utilising the very idea of Professor Goddard, the same newspaper publicly admitted its error in another editorial.

Every invention, be it the motor car, computers or the World Wide Web, has helped human development in no small measure. They all are powerful examples of what could be accomplished through education.

The Economic Roles or Benefits of Education

Much of the economic benefits of education accrue to individuals and their families. For members of all demographic groups, average earnings increase measurably with higher levels of education. Over their working lives, typical university graduates earn about 73 per cent more than typical high school graduates, and those with advanced degrees earn two to three times as much as high school graduates. More educated people are less likely to be unemployed and less likely to live in poverty. These economic returns make financing education a good investment. It explains why most parents who are aware of this fact will go to great lengths to give their children the best education.

However, society as a whole also enjoys a financial return on the investment in education. In addition to widespread productivity increases, the higher earnings of educated workers generate higher tax payments at the local, state and federal levels. Because individual outcomes affect others, it is not possible to neatly separate the benefits to individuals from those shared by society as a whole. For example, all workers benefit from the increased productivity of their co-workers and unemployment causes damage to those who are out of a job, but also results in a loss to the entire economy. In addition to the economic return to individuals and to society as a whole, education improves the quality of life in a variety of other ways, only some of which can be easily quantified. Moreover, the economic advantages already mentioned have broader implications. For example, in addition to increasing material standards of living, reduced poverty improves the overall wellbeing of the population and the psychological implications of unemployment are significant. In addition, adults with higher levels of education are more likely to engage in organised volunteer work, to vote and to donate blood, they are more likely to be in good health, less likely to smoke and less likely to be incarcerated. The young children of adults with a higher level of education are likely to read more frequently than other children; they have higher cognitive skill levels and better concentration than other children. All of these areas affect social expenditure in addition to general wellbeing.

Through education, professionals have been trained in different fields. This is why we have scientists, economists, bankers, engineers, financiers, etc. This diversity has allowed for the development of civilisation on a gigantic scale. Skyscrapers are now a common sight in most cities of the world. In times past these were deemed impossible. In the sciences there have been numerous breakthroughs. People have not only been to the moon but are currently exploring the possibility of going even farther. The computer that brought about a revolution in the way we do everything as humans has continued to decrease in size but become more powerful. Some decades back, the first organ transplant was achieved, thereby bringing hope to people suffering from ailments that used to carry with them a certainty of death.

On the Role of Higher Education in Healthcare

I am aware that there is intense debate in the academic world about the causal effects (if any) education has on an individual's health awareness. Such is the magnitude of the debate that different schools of thought and methodologies for collecting data unique to this topic have evolved. I personally consider it a waste of precious time to argue whether or not a person's health awareness has any link with his or her level of education. Anyone in doubt as to the correlation between the two needs only to talk to me.

I was born and bred in a rural community. I recall that at that time little attention was paid to matters as important as personal hygiene for the simple reason that we had no knowledge of the ills associated with a poor regime of personal hygiene. In this state of blissful ignorance, we often drank from the same waters in which we defecated. We would gently prod back human waste and insect larvae on the surface of the water and drink our fill of contaminated water. Indeed, toilets in those days were virtually unheard of. Many families defecated in rubbish dumps known in local parlance as *atan*, located at the back of most homes. Insects would feed on these dumps and transfer germs to food being consumed by people some metres away. This practice was common for several decades until the then colonial administrators appointed health officials, commonly referred to as *wole wole*, who were saddled with the duties of ensuring strict compliance with health and environmental codes. Educating people on the dangers inherent in their filthy practices helped to bring about awareness and gradual eradication of them.

At birth, the umbilical cords of many newly born babies were severed with unsterilised metal objects in often unhygienic environments. In such circumstances, disease and death were rife. But the people in their ignorance had a ready answer

to these occurrences. If a child died at birth or soon thereafter, it was labelled an *abiku*, meaning one who in the spirit world had allegedly elected to die after birth to torment the would-be parents. In some instances, the deaths were also attributed to wizards or witches who, it was claimed, on seeing the good that the child would achieve in the world had conspired to kill it.

Leprosy is a disease which is not as widespread as it used to be, but it was and remains very contagious. Victims were often kept hidden by their relatives owing to the stigma attached to it. However, some of us children and even adults were oblivious of the contagious nature of the disease and in ignorant bliss often associated in very close quarters with sufferers of the disease. This ensured that it spread like wildfire. Fortunately, education has brought with it a knowledge of the workings of the disease, leading to its reduction.

Africa as a continent still faces immense healthcare challenges. Polio, despite millions of dollars devoted to its eradication, is still prevalent in some parts of the continent. This also applies to the condition known as sickle cell anaemia. In the case of polio, governments have rightly identified education as a means of combatting it by getting parents to have their children immunised at a very young age. Whilst successes have been recorded, there have been some failures, mostly attributable to lack of knowledge on the part of the citizenry. In one unfortunate incident in Northern Nigeria, government officials who were on an immunisation exercise were attacked and killed, as a result of false information being spread by some elements opposed to the government. This could only have occurred in an atmosphere or setting in which there was limited penetration of education.

However, in the case of sickle cell anaemia, the story is slightly different. Most people are now aware that a simple medical check prior to marriage will let them know if they are likely to give birth to children with the condition. Thus, many couples who would otherwise have gone ahead to be joined in holy matrimony were compelled by their medical circumstances to call off their plans following the discovery that they carried the genes that could produce children with the disease. I am even aware that some churches in Nigeria insist on this particular test before marrying couples. This has been made possible with the advent of modern education. I have no doubt that many children who died in infancy or childhood in days gone by, and who were ignorantly labelled *abikus*, were victims of the condition. In related circumstances, history also teaches that in what is now modern-day Calabar, twins were either killed or cast away at birth as they were considered evil. It took the intervention of missionaries through education and enlightenment to stop the practice.

On the Crisis in the Higher Education Sector in Africa

Education in most countries in sub-Saharan Africa is in crisis today. For many years, African universities have declined in quality, substance and prestige. Over the last two decades, many of our universities have become classic examples of what American scholar, Gareth Hardin, described as the 'tragedy of the commons'. Hardin theorised that assets that are commonly held by members of the public often perish as a result of neglect and lack of proper care. Soon after independence was granted to African countries by their colonial masters, African universities started experiencing severe financial starvation, infrastructural decay and political neglect. Those who attended or taught at any Nigerian university between 1965 and 1990 could easily appreciate the extent of the depreciation of necessary physical structures and facilities in our universities. The combination of a lack of adequate funding, a dearth of qualitative practical training curricula and an inability to attract the best teaching minds have all resulted in the stagnation of African institutions of higher learning. We have reached the current appalling point where the Centre for World University Rankings, and other global rankings that rank universities based on facilities, programmes and instructional content, mention few African universities in the top 500 category. This is in a continent with over 1,000 universities.

There are a number of schools of thought that explain this trend. Some scholars cast the blame for the current decline in the quality of education in Africa on the pedagogical approaches of colonial education, which eroded and devalued traditional African cultures, perpetuated intellectual servitude and technological dependence, and enshrined a societal inequality that remains deep-rooted.

Some blame the falling standards on the arbitrary partition of Africa by European powers in Berlin in 1884, by lumping together historically incompatible people, independent or antagonistic groups, animists, Christians and Muslims, into political units that continue to wobble as a result of widespread intertribal wars, religious and boundary disputes, civil disobedience, pervasive lack of internal democracy within political parties, insurgencies, kidnappings, ferocious terrorist acts, killings, murder and the widespread destruction of property. Most, if not all, of these countries have failed to transform into viable nation-states, thereby rendering quality education unattainable.

Some blame the 'decline' or falling educational standards in post-colony Africa on the failure of African leaders to replicate and consolidate on the modest achievements of the colonial era with respect to qualitative education. Those in this school of thought point to the failure of successive African governments to

properly maintain the educational institutions and structures that were put in place by colonial leaders, and the failure of governments to devote significant portions of their yearly budget to education. The search for sustainable education in Africa cannot continue to follow the simplistic argument of blaming the European powers. We must genuinely ask ourselves, what have successive African leaders done to transform into viable states those areas carved out arbitrarily by the European powers in Berlin? What have they done to build upon and improve colonial structures of education? What can we do to transform the incompatible groups in each nation?

Still on the Steady Decline in the Quality of Education

In times past, the Nigerian educational system was the envy of many, at home and elsewhere. Graduates of Nigerian universities competed favourably with their counterparts from universities in other parts of the world. The products of our universities, especially from the top five – at Ibadan, Ife, Lagos, Nsukka and Zaria – compared very favourably with those of any university in the world. They were sought after by the universities of Harvard, Cambridge, Oxford and London for postgraduate degrees. When they were admitted, they achieved record-breaking performances. They were offered the best jobs after graduation by multinational companies and other big corporate bodies. Those who chose to remain and teach in the universities either in Nigeria or abroad ranked favourably with their foreign colleagues.

However, with the coming of the military came the desecration of the education system. Then quality began to fall, especially with the advent of the military in the civil governance of the country. The system was militarised. The schools were deprived of adequate funding. Old infrastructure was not replaced or repaired. Teachers who had previously been well remunerated suddenly became overworked and underpaid. Morale became low. The worsening economic situation did not help matters as unemployment ravaged school graduates. They became despondent. Our university graduates suddenly turned into a shadow of what they used to be and the outside world treated them as such. They were no longer sought after among foreign universities and employers. Eventually, the problem reached its nadir when employers began to reject and discriminate against graduates of polytechnics and the state universities. The situation is now so frightening that all stakeholders agree that something has to be done urgently and decisively.

The perennial failure by successive governments to prioritise investment in education has meant that much of the infrastructure at several African universities dates back to pre-independence. Aside from the dilapidated and old classroom

and laboratory infrastructure, many of the structures have been stretched beyond their original carrying capacity with the increase in student numbers. As the United Nations Regional Bureau for Africa recently noted: 'The pace of skills and technology development and innovation has been slow in Africa, mainly because of the absence of a critical mass of highly university-educated skilled labour, and lack of high quality laboratories and scientific equipment …'.

Poor working conditions, the lack of facilities and the deterioration of infrastructure have stifled innovation, research and academic scholarship across Africa. Many of our best brains at Oxford, Harvard, etc. have been unable to come back home due to poor working environment and the lack of an innovative and supportive academic environment for world-class scholarship. As a World Bank study titled 'The Challenge of Establishing World Class Universities', noted: 'In academia, the adage "you get what you pay for" appears accurate regarding better-quality work being done where salaries are relatively highest. World-class universities are able to select the best students and attract the most qualified professors and researchers.'

The poor working environment at our universities has also reduced their global appeal and ability to recruit students from abroad. I recall that, back in the days, the University of Ibadan, Obafemi Awolowo University and the University of Lagos were like a mini United Nations, with students and lecturers from all over Africa and Europe. Apart from the diversity of thought that this global composition provided, it also created a platform for cultural, language and intellectual exchange on important issues of the day. Today, several African universities have become local institutions, attended mainly by local residents from the immediate state or region where the university is located. This has regressed to the current sad and sorry point whereby several faculty members now teach courses in local dialects.

This siloed and local approach was a fundamental flaw I was determined to correct when I established Afe Babalola University, Ado Ekiti. Not only did we carefully and selectively recruit brilliant lecturers from the United Kingdom, Romania and the United States, we also introduced a novel approach of globalising our university by providing our students opportunities to learn multiple global languages. At ABUAD, students in all disciplines are provided the chance to learn Chinese and French. An ABUAD graduate is not just an engineer or a lawyer, but also a fully multilingual and globally ready professional. Based on a MOU that we have had in place with China since 2011, every year our students are given the opportunity to travel to China on a three-week learning scholarship to sharpen their proficiency in Chinese language and culture. This is the sort of globalised learning approach that can spearhead our universities to become world class.

Universities across Africa must adopt this global approach to learning. The complex dilemma that we, as university leaders, have is:

1. Our universities cannot be world class until they begin to attract international students from all over the world.
2. Our universities cannot attract students from all over the world until we have a globalised curriculum and course offering.
3. We cannot have a globalised curriculum and course offering until we recruit dynamic and internationally trained experts and scholars who can lead such courses.
4. We cannot attract and recruit internationally trained experts and scholars until we have the courage and vision to innovate and dream big. Dreams come true if we work at them.

Challenges Faced as Pro-chancellor of UNILAG

The first major challenge we faced was the poor quality of students who were admitted, which emanated from poor admission procedures. The admission process through JAMB was tainted and people were coming in with fake qualifications. We had to introduce a post-JAMB test to weed out the unqualified students, which largely led to an improvement of the situation.

When we resumed, the image of UNILAG was very poor. The university was regarded as a commercial entity especially because of the South Korean Outreach Programme that was established to make money for the university without due authorisation from the appropriate bodies of the university. Certificates were being issued without university Senate approval and there was serious division among the university staff on the propriety of the programme. While some were involved, others were marginalised. Eventually, we had to stop the programme and reconcile the divided university community.

Then there was the poor management of university resources and poor accountability, coupled with the problem of corruption in the university. We had to overhaul the whole contract awarding procedure and institute processes for probity and accountability. We met a lot of resistance in doing so but we were persistent and eventually we succeeded.

There was also the problem of indolence among the university staff. At the same time the staff unions had an overwhelming influence on the university campus. Lecturers would not attend classes and many were using outdated curricula to teach students. There were no regular reviews of curricula in most of the departments. Non-academic staff would not perform their duties and

most expected inducements before carrying out their assignments. Staff unions would regularly call for strike action over mundane issues and academic calendars were unstable. Also, most of the university facilities had deteriorated and were inadequate for the rising population of students.

The problems were surmounted with determination by the council to succeed, and in leadership by example, especially in the area of probity and accountability. We also tackled the unions by making membership of staff unions optional and payment into the union voluntary. We embarked on prudent management of university resources by examining all contracts and projects and stopped the payment of mobilisation fees before contracts were implemented.

On Institution-building and Governance Reforms in Universities

The first and most important thing in reforming universities is to embark on a careful selection of the members of the governing council. Emphasis must be placed on selecting people of integrity and knowledge instead of making council membership an avenue for political rewards for patronage. In many instances, council members see their appointments as a means to reap from their investments in the extant government and make financial gains. Many don't have an inkling about their responsibilities on the council and attend meetings in order to collect allowances and stay in luxury apartments. They do not see their appointments as a sacrifice and national service. I was lucky to have good people with me when I was pro-chancellor of UNILAG and that largely contributed to the success we made while we were there.

Secondly, there is a need to reform the National Universities Commission (NUC), as a regulatory body (or its equivalent in other African countries). The influence of the NUC on universities is very pervasive not only as a watchdog but also as an organisation that supervises policy formulation and implementation to realise the objectives set for higher education. It is therefore important to constantly review the direction of such a body and ensure that its performance is in tune with global best practices. It is constantly involved in educational planning and overall national relevance of higher education to development; it therefore needs to be dynamic and ensure that universities perform according to the overall development vision of the country.

There is an urgent need for all universities to reform their curricula to reflect contemporary realities. Many universities have not reviewed their curricula for decades and students are graduating with the same curricula that were designed decades ago. It is not a surprise, therefore, that there are complaints that university

graduates are unemployable. If you are operating in a global context, common sense dictates that you stay up to date with that context. Most relevant to this is the content of what you are teaching and graduating students with. Therefore, there must be a norm that you periodically review and reform your curricula to reflect new and emerging trends, especially in the area of technological and human resources. It must also be realised that contemporary graduates are highly mobile. They can relocate to anywhere in the world and their skills must be relevant anywhere they find themselves. So part of institution-building is ensuring that your products have global relevance and are marketable anywhere in the world.

In order to improve on institution-building in higher institutions, there must be an improvement in government financial and budgetary allocation to higher education to reflect the minimum standard that UNESCO has prescribed. UNESCO has recommended that countries should devote at least 26 per cent of their national budget to education. In 2018, Nigeria puts in less than 7 per cent of its national budget. I can attest that, shortly after independence, the Western Regional government of Chief Obafemi Awolowo devoted about 56 per cent of the region's budget to education, which accounts for all the achievements of that government in the educational sector then, and has since become a reference point. That the free education then provided the foundation on which western Nigeria is presently leading in education is a fact that cannot be disputed. Any society that does not make education its priority cannot go anywhere. Look at the Nordic countries and other developed countries across the world. The basis of their growth and development is rooted in the strong educational base of their societies and the good educational qualities of their citizens. In essence, African countries cannot go anywhere until education becomes a priority for their governments.

On Government Attitude and Disposition to Higher Education in Africa

With the exception of only a few countries, especially in southern Africa, government attitudes generally to higher education are very poor. This is mostly as a result of visionless leadership across the continent. Unfortunately, this affects all segments of society across the continent. It is impacting negatively on economies, healthcare, food security and technological advancements, among others. The quality of those who aspire to and gain political power is appalling and that is why when the wrong people get into power, they first destroy the educational sector in the quest to stall opposition to their greed and thirst for power. How do you account for the frustration African intellectuals have experienced and the spate of brain drain across the continent? No meaningful attention is paid to

the education sector, while the political class is basking in affluence. If African governments do not address the revival of education, I'm afraid the future is very bleak on the continent.

On Access to Adequate Resources by Educational Institutions on the Continent

Presently, there are insufficient resources available to support higher education development on the continent. Unfortunately, the little that is provided is poorly managed, especially in public universities. Sometimes the lack of skills to mobilise and manage resources by higher institution management is part of the problem. The problem of corruption is also very pervasive and cuts across every management stratum of the institutions. During my time as pro-chancellor of UNILAG, I visited project sites on campus to personally assess the quality of work done before any funds were released to contractors. This method did not go well with many people who benefitted from the corrupt system, but from there we were able to stretch and adequately apply resources to achieve results.

The staff in African universities are not adequately motivated and this inevitably leads to brain drain from the continent. Funds are not available to compensate intellectuals for their input, the environment is not conducive because there are no resources for research and there is inadequate equipment to support maximum productivity. In that kind of situation, you cannot retain academic quality on the continent even though many are willing to make sacrifices. In a very harsh environment with poor resources, there are limits to what you can sacrifice and, hence, you cannot really blame the intellectuals who migrate to positions outside the continent.

In terms of access to adequate resources by higher institutions for research and innovation, resources from government and its agencies can never be enough. Higher institutions should diversify their resource bases. Look at the torrent of institutions in Nigeria—it is not reasonable for anyone to expect government to provide everything for them. That is why parents should not be excluded from participating in funding the education of their children and it is irresponsible of parents to expect government to carry all the responsibility of educating their wards. In fact, that is one of the reasons why some people just give birth; remember the old man in Niger state or somewhere, who has over 100 children. That is irresponsibility of the highest order when you don't have the resources to educate them. Maybe we need to copy what the Chinese did when they regulated the number of children their citizens could have at a point in order to achieve economic prosperity and social improvement.

Endowments should be expanded and strengthened by higher institutions to support their resource base. In my university, ABUAD, for example, we already have an endowment of NGN 200 million. We plan to expand it to one billion naira very shortly because we know that the future of our university depends on it, just like every other university across the world. For example, the endowment of Stanford University in the US is bigger than the budget of all Nigerian universities put together, which is why that university is able to make the impact it does in research and development in technology. Apart from endowments, more corporate bodies and the private sector should be involved in supporting projects, awards and in erecting structures in higher education institutions. Since invariably they benefit from the output of these institutions, they should be encouraged to contribute towards strengthening the schools and colleges to enhance the quality of their products.

On the Right Policies and Vision to Nurture Education in Africa

As I mentioned earlier, governments must enact policies that will compel parents to be more involved in the education of their children. Absolutely free education is impossible in any African society and that is the first thing we need to realise. Making education a national priority and resuscitating excellence in higher education begins with the deep involvement of parents in the education of their children. It will be irresponsible of any parent to expect that government and the society will train his children and then he can reproduce anyhow. I also think there should be restriction on the number of children parents could have and insistence that parents must train their children in order to reduce the burden of education of children on the society. If these policies are put in place, you'll discover that, within a short period of time, poverty will decrease and the quality of living and education will be enhanced.

The Myth and Reality of Free Education as a Constitutional Right

It has been argued in some quarters that free education is a constitutional right and that governments across the federal, state and local levels are required by Nigeria's Constitution to provide free education across the three tiers of the educational ladder. Many proponents of this idea usually refer to the provisions of Section 18 of the Constitution of the Federal Republic of Nigeria, 1999 (as amended). I must say straight away that free education is not a right under Nigerian law. The provision of Section 18 referred to earlier comes under Chapter Two of the Constitution, which contains what are known as

Fundamental Objectives and Directive Principles of State Policy. The contents of this chapter are designed to act as aids or guides to government in the running of the country. The provisions of this chapter, as laudable as they are, cannot be enforced in any court of law.

In reality, what the law avails to people in Nigeria is the liberty to be educated and not the right to education. Parents may decide not to educate their children or choose to educate them in whatever other lawful way they prefer. However, successive governments have experimented with one form of policy or the other designed to provide free education at some tiers. One is the adoption of Universal Basic Education (UBE). The UBE programme was formally launched in Nigeria by President Obasanjo in 1999 with the stated objectives of:

> Developing in the entire citizenry a strong consciousness for education and a strong commitment to its vigorous promotion;
>
> The provision of free, universal basic education for every Nigerian child of school-going age;
>
> Reducing drastically the incidence of drop-out from the formal school system through improved relevance, quality and efficiency;
>
> Ensuring the acquisition of appropriate levels of literacy, numeracy, manipulative, communicative and life skills as well as ethical, moral and civic values needed for laying a solid foundation for life-long learning. (UBEC Document 1999)

However, despite the government's best efforts, the UBE programme today faces the same myriad problems that militated against the previous policy of Universal Primary Education (UPE), of which funding remains the most critical. Despite this, many still advocate that government must provide free education at all levels. In recognition of the attractiveness of free education, many politicians make it an important aspect of their campaigns. On assuming office, some of them then realise the enormity of the situation at hand and in order not to bring about a total collapse of the educational sector, make it known that government alone will not be able to fund education. However, some stubbornly hold onto the notion of 'free education' at all costs. But the reality is that there is a grave cost to such schemes. That cost is loss of quality.

In my estimation, what should be of importance is the provision of quality education and not just any education. What is the point of having a policy or programme that places a high premium on the number of graduates produced rather than on the quality of those graduates? The so-called 'free education' programmes of some governments have continually produced low-quality products. This is

because governments have not been able to fund education to the level required to make the policy of any significance. The free education policy of the then Western Region of Nigeria had two major characteristics: an all-encompassing approach to the issue of free education, which recognised that attention must be paid to quality and not quantity; and adequate funding—education received the highest budgetary allocation.

But we live in different times. The population of Nigeria has increased over the years to the current estimate of about 214.5 million people, according to the World Bank. Furthermore, the economy has gone down steadily in the last five years. Whilst agriculture was the mainstay of the regional governments, the economy of Nigeria is now largely dependent on income from oil. Virtually all the states of the federation and the local governments depend on revenue allocation from the federal government to survive. The effect is that the little available revenue accruing to the states must be directed not to education alone, but to equally important areas of the economy, such as healthcare and the provision of infrastructure. At the moment, the security challenges experienced around the country have ensured that defence gets the highest budgetary allocation, which has left many federal and state universities bereft of funds.

Yet, for reasons ranging from the political to what I describe as a misplaced or misunderstood notion of free education, government continues to create more institutions of higher learning. In 2018, the federal government announced the establishment of three new universities at a time when the six established not long before were still finding their feet amid the paucity of funds. The overall effect has been an acute drop in standards. *Punch* newspaper reported that students in a secondary school in one of the states in the southwest of Nigeria had been asked to donate two six-inch concrete blocks each to the school. Interestingly, the decision was taken by the parents of the pupils who took it upon themselves to construct a fence for the school and complete work on some classrooms. It was revealed that the West African Examination Council (WAEC) had consistently refused to accredit the school for its examinations, with the effect that the students of the said school were often required to travel kilometres to sit for exams in faraway towns. As a result, some parents had lost children to car crashes. As pathetic as this story sounds, it is one that plays out at the beginning of the academic session in most schools. Students are often asked to provide their own desks and even cartons of chalk for the teachers. Yet many Nigerians still hold steadfastly to the belief that free education is the way out. I say it is not!

New Thinking Across the World on Higher Education Funding

It is a historical fact that in the early medieval universities, students collected fees and paid the salaries of their teachers. They also issued the working rules. If, for instance, a teacher was absent from class, he was punished by the imposition of a fine. The funding of a university is as crucial as the functions expected to be performed by the university. To this end, it is an open secret that there exist various sources and modes of funding universities. Modern universities may be financed by a national, state or provincial government, depending on the circumstances of the university in question. Across the globe, the consensus now is that students or their parents and guardians, and not government, should pay for their education in public institutions. There has been a rethinking about the role of public institutions. Originally, the first universities in the world were established by private organisations and individuals, followed by Christian universities. It was only about 200 years ago in the wake of welfarism in politics that governments started establishing universities in order to cater for the general population. These universities were therefore funded by the government, but things have changed for the reasons already noted.

Nigeria presents a classical study in overdependence on government for the provision of virtually everything imaginable. Granted, given the peculiar nature of our circumstances the government (at all tiers) is the greatest employer of labour; this is not to say that government must be the all in all. Unlike other parts of the world, until very recently, the Nigerian government was responsible for the establishment of universities (federal and state). This probably explains why the main focus is directed at the government for the sustenance of our universities. But total dependence on government for the provision of everything has not, is not and will never be the solution. No wonder that virtually all our government-owned universities (and tertiary institutions generally), like other parastatals, are underfunded. The time has come when Nigeria must face the reality of its economic and financial circumstances and do what others do elsewhere to propel universities to become institutions of national relevance, capable of fulfilling their national aspirations.

I refer to the 2002 UK government paper titled: 'Higher Education Funding: International Comparison', which has an overview of tuition fees and summarises the position in thirteen OECD (Organisation for Economic Cooperation and Development) countries. It states as follows:

> Tuition fees are becoming the international rule and not the exception. Eight of the 13 OECD main competitor countries analysed in this paper charge tuition fees

> of some sort. All of these eight, bar Netherlands, vary their fees to some extent. In Canada, tuition fee is on the rise. Australia presents a most interesting scenario as differential fees were introduced having regards to income.
>
> For Japan, with effect from 2000, state universities would be allowed to have greater autonomy and more importantly, freedom to set their own tuition fee levels. In National universities, fees are set at 2,700 Pounds.
>
> In Germany, the issue of tuition fee is now subject of intense discussion. In China, fees are set according to market conditions taking into account both costs and demand. Specifically in America, fees at public and private institutions are rising by an average of 14.1 per cent from 2002-2003 to 2003-2004 at public institutions. Overall, the split is between public universities which charge around $5,000 to $15,000 per year depending on location, type, and length of course; and private universities where fees can be as high as $30,000 per year.

Several attempts were made in the past to reflect on the necessity for tuition fees in Nigeria. The Committee of Registrars of Nigerian Universities sent a memo to government on this matter in 1996. The first of the solutions then proposed was to request universities to provide professional accounting that would show what it cost exactly to provide its services. For instance, at the University of Lagos, what does it cost the university to provide X number of medical students in their 151 semester study? This requires that all cost elements (e.g. Biochemistry 101) per X number of students per semester must be computed and make it possible to determine what it costs to educate a medical student at the University of Lagos. Now, if the government says that anyone who goes to medical school need not pay, this means that the government is disbursing to the university exactly what it costs the university to provide the service for each student. Otherwise, both government and the college authorities are engaged in a murderous game of make-believe in the training of doctors.

The Registrars' suggested solutions in 1996 are still valid today and are based on the following principles: that parents who can pay fees should be allowed to pay instead of preventing them by declaring a free education that we cannot match with commensurate financial backing; that no student who qualifies for admission should be denied higher education merely because of his/her inability to pay fees; that all tiers of government from local council to federal government should be allowed to be part of the fee-paying process; that the private sector should be allowed to be part of the scheme.

The guidelines for the implementation of the principles, which in my view should be given due consideration, include:

1. That the federal government may provide scholarships on merit to say 30 per cent of those who properly gain admission to the university, to cover 100 per cent of tuition. Tuition will, of course, be different from institution to institution as indicated above. Additional loans may be granted to cover a proportion of other costs of living and books, while parents or guardians take care of the rest, which will be minimal.
2. Again, scholarships may be granted for say 75 per cent of the tuition for the next 30 per cent on merit. And additional loans may be granted to cover another segment of the cost of living and books.
3. State government should also follow suit by granting scholarships and loans according to their own criteria to cover the remaining 40 per cent of the population of admitted students from their states.
4. Local councils may grant scholarships and loans to indigent students from their local council communities. Local authorities are best placed to determine the criteria for indigence and membership of a local council.
5. The federal government may again grant scholarships and loans to those from disadvantaged areas who have not been adequately covered by 1–4 above.
6. Universities themselves may grant scholarships based on their own criteria.

The above guidelines will work on the following conditions:

- That no one will benefit in the same year, from more than one award of scholarship and from loans to cover the same item of expenditure.
- That universities publish verifiable and approved costs of tuition and other charges.
- That each student has a university identity card based on the similar one we worked out at the University of Lagos.
- Continuation of scholarships and loans will depend on continued good academic standing.
- That students take the first step to apply for these scholarships and loans.
- Each Registrar's office will have a unit to clarify applications yearly on the basis of good academic standing.

Examination Fees

Examination fees have always been a good source of income for universities. If, for instance 75,000 students/candidates take entrance examination and pay only NGN 5,000 each, the income derived from examination alone is NGN 375 million. The Joint Admissions and Matriculation Board (JAMB) in Nigeria is the only organ established to conduct examinations for candidates seeking admission into tertiary institutions, including universities. I had earlier said that the JAMB's

results were not reliable enough because of various malpractices and suggested that universities be allowed to conduct weeding tests for those seeking admission into them. We are happy that both parties have come to some reasonable agreement on that vexed issue.

I now make another suggestion. In the JAMB examination for entry into universities, the number of candidates who sought admission into Nigerian universities in 2005 alone, for instance, was 913,862. The JAMB charges each candidate a sum of NGN 2,650, which means that it must have collected a sum of NGN 2,421,734,300.00, with prudent management. I now suggest that a certain percentage of this total sum should be paid to the universities on the basis of the number of candidates that make a university their first choice for admission. Apart from boosting the finances of the universities, it will reduce their burden in carrying out further admission tests and interviews for the candidates as may be deemed necessary by each university.

Endowment Funds

History relates that the early universities were funded by scholars and wealthy individuals or groups of people, and generally by people who were interested in learning. Their efforts were the origin of endowment. Harvard University, indisputedly the oldest institution of higher learning in the United States, presents a perfect example of how a university should be funded. Harvard University's endowment at the end of the financial year 2004, valued at USD 22.6 billion, was unrivalled and unequalled.

The Harvard endowment, in the main, is a collection of more than 10,500 separate funds established over the years for the following:

- To provide scholarship
- To maintain libraries, museums and other collections
- To support teaching and research activities
- To provide ongoing support for a wide variety of other activities.

The endowment, which has helped to provide the stability necessary for Harvard University to remain a premier educational and cultural institution, set a new milestone in the history of philanthropy for higher education in the US and, indeed, the academic world. The record USD 22.6 billion was earmarked for the advancement of Harvard University's teaching and research missions. The lion's share of the university's income came from endowments.

It should be noted that the students at Harvard are always the ultimate beneficiaries of the huge endowments. For example, during the 1999/2000 academic year, Harvard undergraduates received USD 59 million in scholarship aid alone. More than 90 per cent of this amount came from the college. During the same period, about 49 per cent of Harvard undergraduates received scholarship grants averaging USD 18,700 each; and approximately70 per cent of undergraduates received some form of financial aid totalling more than USD 81 million. What all this translates into is that, in reality, all students at Harvard University are on financial aid because the actual cost of a Harvard education exceeds the cost of tuition by approximately USD 10,000 per student. Most importantly, this subsidy is made possible through gifts and endowment funds.

Another example is George Washington University, another leading university in the world. It grew from the vision of George Washington who left a bequest of fifty shares of the Potomac Company 'towards the endowment of a university to be established within the limits of the District of Columbia under the auspices of the General Government if the government should incline to extend a fostering hand towards it.' Although the government never extended the anticipated 'fostering hand' and Potomac Company passed out of existence, later events justified George Washington's vision, hope and aspiration in all ramifications. Today, the university ranks among the very best in the world with solid funding and financial foundation.

The University of Cambridge, a world-class tertiary institution of great repute, marked its 800th anniversary in 2009. As far back as the sixteenth and seventeenth centuries, the issue of endowment as a veritable source of income had been emphasised at Cambridge through the pioneering efforts of King Henry VIII. Thus, the endowment by Henry VIII of five professorships, the 'Regius Professorships' of Divinity, Hebrew, Greek, Physics and Civil Law happily emphasised changes in teaching methods and, more importantly, set a worthy example for private donors.

The long and short of my consistent call for endowment and adequate funding of universities through alternative means is predicated on the fact that sustaining a world-class university (or any university strictly speaking) demands investments in new facilities, new areas of study and most importantly, in people. Consequently, continued fundraising efforts and innovative partnerships will be most vital.

All things considered, there is now an urgent need for co-operative partnership in the funding of universities. Governments, parents, the alumni, the community,

multinational and other successful companies must participate in this partnership. It is true that there is an Education Fund already instituted in Nigeria; however, in view of the clamour for more funds for universities, there is no reason why this should not be increased.

Need to Amend the TETFund Law in Nigeria

There is a need to amend the Tertiary Education Trust Fund (TETFund) law to make it more relevant. Consequent upon the failure of public universities to fully accommodate a majority of qualified candidates, licences were granted to private individuals and organisations to establish private universities in 1999. With the passage of time, the number of such private universities has increased steadily. However, despite the fact that these universities offer a viable alternative to public institutions and even complement and aid the drive of the government to increase the accessibility and quality of education, private universities do not receive any form of funding from the TETFund .

A careful reading of the relevant sections of the law shows that the intention of the lawmakers in imposing an education tax on registered companies in Nigeria was to advance education to various levels and categories of education through the rehabilitation, restoration and consolidation of education in Nigeria. Curiously, by the provisions of section 7(1) of the Act, private institutions including universities are excluded from benefitting from the funds collected from companies, which are mainly private. It seems clear that section 7(1) of the Act contradicts the provisions of section 3(1) and violates section 18 of the 1979 Constitution. The exclusion of private institutions, apart from the contradiction between sections 3 and 7 of the law, is obviously unconstitutional, unfair and unjustifiable.

The government is probably right in thinking that if the fund were made available to all private universities, it might be abused as some people would just wake up one morning and claim they had established some nebulous private universities just for them to access funds from the TETFund. But there is a way out of this debacle, as has been done in other parts of the world. It is hereby suggested, and I do recommend, that necessary legislation should be put in place for any private university that operates on its permanent site with a minimum of twenty academic programmes accredited by the NUC and has commenced its postgraduate studies, to give it unfettered access to TETFund facilities.

Tackling the Problem of Student Cultism in Higher Education Institutions

Student cultism is perhaps one of the greatest problems confronting tertiary institutions in Nigeria. In recent years, this plague has assumed a frightening and deadly dimension. It is so worrisome that the possibility of its spread to secondary, and even primary, schools in the country is enough to give every caring parent a cause to lose sleep.

The term 'cult' has been defined as 'a group of people engaged in a form of ritual usually under oath, binding the members to a common cause'. Such groups of individuals operate covertly in furtherance of their objective, which is usually detrimental to the interests of others. Thus, a cult is a group of people that places a secondary need in the position of a primary need. In other words, any group of people who emphasise secret initiation or rituals for the purpose of group help or group protection, but whose activities are clandestine in nature, are a cult.

Why cultism? For us to appreciate the enormity of this phenomenon on our campuses, it is vitally necessary to revisit the origin of cultism in Nigerian universities. The first recorded evidence of cultism in tertiary institutions in Nigeria was in 1952 at the University of Ibadan, when a group of seven people (who included Nobel Laureate, Professor Wole Soyinka, and Emeritus Professor Olumuyiwa Awe) founded the Seadogs Confraternity (popularly known as Pyrates). It had three principal objectives: to fight against moribund conventions of colonial mentality in the university system, such as the compulsory wearing of formal dress to the cafeteria, and the idea of students behaving as overlords as per British behaviour; to fight for humanisation ideas to revive the soul, to establish discipline, orderliness and orientation to laudable national objectives; to fight against corruption, tribalism and cultism.

These objectives, ex facie, are laudable given the prevailing circumstances of 1952 at the then University College, Ibadan. But today, the story is different. The Pyrates Confraternity effectively became one of the major cults terrorising our campuses, until the top hierarchy of the confraternity banned its existence on campuses. However, the organisation and its founders, patrons and members still exist off-campus.

Why does cultism still exist? Some of the known reasons why cultism prevails in our institutions of learning, especially universities, include: long years of military rule and its attendant brutalisation of the civil populace; the employment of discretionary admission which favours less brilliant students and prejudices the interest and chances of brilliant and talented ones; the presence of non-students

in the halls of residence of higher institutions, which makes it easier for external forces to employ them for criminal ends; the access of students to dangerous and sometimes sophisticated lethal weapons. Other reasons include: the readiness of some university administrators to employ cult members for their own ends, like the suppression of vocal and dynamic student leaders; the existence of fear as a result of the lack of security on campuses; inadequate accommodation leading to overcrowding and all manner of sharp practices; and, finally, the course system, which allows a student to stay in school for a longer period than necessary and thereby become a 'professional' student in the process.

The follow-up question to the above submission is, why do students join cults? Many reasons can be proffered but I will attempt just a few: the desire to obtain undue privileges; the desire to have a sense of power, influence and prestige among fellow students; the desire to command undeserved authority and respect on campus; readiness to confront injustice and inequity, especially from school authorities and lecturers; a rabid desire to terrorise people by exhibiting the capability to inflict violence on real and imagined adversaries; the need to force and intimidate lecturers and fellow students to grant unjustified, selfish and devilish requests.

Other reasons include: the desire to carry undue favour and obtain financial assistance; for the male cultists, to create an avenue for securing girlfriends through intimidation and/or the guarantee of protection on campus; the need to work in conjunction with other students of a similar persuasion for the purposes of evading sanctions and/or justified punishments; the urge to acquire false boldness consequent on their own inherent weakness and or lack of parental care and discipline; or simply out of misplaced inquisitiveness and involvement in social vices.

I humbly suggest some of the measures that could be used to minimise or eradicate cultism on our campuses. First, there should be full sensitisation of students on all our campuses to the ills and dangers of cultism, which include untimely death. Members of any secret society and or campus cult should be prohibited in any ramification. Right from matriculation, new students should be made aware of the penalty of outright expulsion should any of them dabble in cultism. There should be compulsory disclosure of the identities of cult or suspected cult members. There should be institutionalisation of external vigilance by students, lecturers, non-academic staff and indeed the entirety of the academic community. Furthermore, there should be immediate suspension of cultists upon discovery and apprehension. Their names should be published in national dailies with photographs.

A law should be enacted that will make it impossible for any convicted, expelled or suspended cult members to secure admission to any institution of learning in Nigeria. Such cult members should be prevented from obtaining a Nigerian passport after conviction. In addition, a special court should be established for cultists for the quick disposal of cases. Sales and consumption of alcohol and drugs should be banned on campuses. Suspected cult members should be banned from contesting and holding student union posts, and monetised student union elections should be prohibited. There should be routine inspections of halls of residence by designated honest officials of the institutions. Finally, academic and administrative machinery in the universities should be made to release the results of examinations within a specified time. Failure should be treated as misconduct and strict penalty should be meted out to defaulters. These suggestions are definitely not exhaustive.

The Role of the Family in Interplay of Cultism on Campuses

The primary constituency of education is the family, and the type of education experienced within it is regarded as informal. Whatever appellation it is given, the training and upbringing that any child should get from his or her parents or guardians is not only crucial but critical and foundational. So, in the same way that no building without a good foundation can stand, any child without good parental or family training can hardly ever stand. God himself in the Holy Bible enjoins parents in Proverb 22:6 to 'train up a child in the way that he should go and when he grows up or is old, he will not depart from it'. However, rather than obey this divine injunction, as was done before, the parents of today seem to take delight in just breeding children and donating them to government to train. Most working parents abandon their children to daycare centres, primary/nursery schools and all sorts of homes where they learn bad manners. One need not be a professor of psychology to know, although the experts have also said so, that a child who is deprived of parental care in the early years of development will have a tendency to be mannerless, wild, rough and lack true human affection. The result is that these children see and relate with other human beings as mere objects that can be hit and broken at ease, much the same way as a tree could. Make no mistake, the young teachers of today, who are mainly products of the 'new era', cannot and should never be expected to provide a substitute for parental care. The joy that comes with childbearing and parenthood stirs natural love and care for the child makes the difference between a 'hired' teacher or even house help and a real parent.

The solemn duty of inculcating core family values like respect for elders and constituted authorities, politeness, restraint from violence against other human beings and filial friendliness are some of the virtues that, when learned early, will carry a child throughout his or her life. On the other hand, when children are abandoned to themselves, they readily make friends with bad elements and imbibe their ways and manners. Worse still, some parents do not even have the time or interest to ask or find out what work their children do in school, what experiences they go through, or check their behaviour, until they become a full-blown terror to all and sundry. This certainly cannot be right. It is immoral and sinful as it is a breach of divine injunction. Such children are easy prey for these illegal groups when they penetrate their schools. Unfortunately, there is strong evidence that some parents are involved in the promotion of illegal cult groups. How then will a child coming from such parents not become involved? In fact, the natural assumption is that the child would virtually have perfected the art of being a social deviant even before gaining admission to any school. So, what parents do and the type of life they live invariably have a strong bearing on children's behaviour.

When I got to UNILAG as the pro-chancellor and Chairman of Council, I made sure that the Parents-Teachers Association (PTA) played a vital role in the affairs of their children. Part of what I did when I discovered that many students had been suspended was to invite those students with their parents to a meeting. They were made to understand the dangers and stigma of 'cultism' and irresponsible behaviour. I indicated that I was ready to reabsorb them into the school on the condition that parents and guardians gave written undertakings to be of good behaviour. At the end of the day, some of them even helped to fish out cultists. Recently, I met one of those boys in Abuja where he is now personal secretary to one of the ministers. You can imagine how happy and profoundly grateful he was that I helped to salvage his future. I am happy that with the help and co-operation of parents and former cultists, we were able to stamp out cultism from the university during my tenure. I hope they did not go back to it. I know also that, some years ago, parents would occasionally walk to the school or visit teachers who taught their children, without prior notice, just to find out if their children were in school and how they were doing. They would ask one or two questions and make some observations for themselves first-hand.

This kind of synergy between parents and school authorities, to my mind, is the type of interplay that I believe can work effectively to eradicate illegal cultism from our schools and universities. The point here is that a child who comes from a home where violence is the order of the day will tend to carry it over to school and will have a high tendency to join any society that promotes violence. In the same

vein, a child who is pushed out of the home by parents or guardians will readily find comfort and solace in the hands of any group that shows him or her anything that has a semblance of love, care or acceptance, albeit unreal. The children who come from backgrounds where hard work is discouraged will also not want any academic endeavour that will task them at all.

The Role and Interplay of Religion in Curbing Campus Cultism

Religious bodies running schools is another vital aspect that I believe can curb cultism in higher institutions. In our school days, most schools were run by missionaries who were committed, selfless and honest, had integrity and of course, were courageous and disciplinarians to the core. They taught sound moral instruction and enforced it. The standards then were very high in both academics' and students' behaviour. This is why I commend the decision by some governments to return mission schools to their original owners and allow religious groups to establish and run universities. Other governments should follow suit and encourage them with facilities and funding.

Most religious groups in the world teach and advocate love, peace and brotherliness, obedience to constituted authorities and reverence to a Supreme Being. Most of them, like Christianity, Islam, African traditional religion, etc, also have moral codes or systems of moral instruction which they start inculcating in their faithful from the earliest stages in life. In the Anglican and Catholic churches, for example, they recite the catechism. The Muslims teach Islamic morality. These practices serve to infuse in the adherents the necessary values for harmonious co-existence in the wider society. Perhaps, religion is one of, if not the most powerful force weighing on the mortal mind. Values imbibed by religious indoctrination are therefore usually hard, or impossible to discard. The point is that, if religious groups realise with the entire society that our educational institutions have been overrun by these devilish groups, then they will gear their sermons, teachings, preaching or however their different gatherings are described to warn of this danger. They may also begin to sanction members who are identified as involved in illegal cults either as sponsors or active field officers.

I am aware that, in the past, some churches would refuse to wed people of questionable character or deny them certain recognition. For example, they might not be allowed to ascend to or attain some positions, like elder, deacon, deaconess, priest, knight, patron, patroness, etc. Muslims will also not permit some people to be made imams, mallams, etc, unless they exhibit some level of commitment and devotion and abhor certain character traits. Alas! In contemporary times, it has

been observed that even known armed robbers, ritual murderers, drug peddlers and in fact cult leaders now buy their way to some of the hitherto sacred religious posts even to the point of becoming priests! What then can anybody expect from them? However, religion and religious doctrines, if properly harnessed, can still become a useful tool in the campaign against illegal societies and their activities in our schools.

The Role and Interplay of Government in Campus Cultism

The role of the government can be pervasive, ubiquitous and barely limitless in higher education institutions. This is because of the monstrous and overriding powers that the government wields throughout the entire society. Unlike other agents already discussed, the government itself is the policymaker, the implementer of the policies and the deterrent of defaulters as well as the custodian of the resources of state. Government is the engine house. One can therefore safely say that whatever direction the government faces, there we all go. In Nigeria today, even the land where educational institutions are set up is, by law, the property of the government while the users are only tenants. So, the starting point is to ensure that the people we elect or appoint into leadership/ political offices are people of proven character and integrity, not touts and criminals. I believe also that such people must have a fairly good education and appreciate the intrinsic value of a good quality education.

Most of the causes of cultism in our schools are traceable to bad government and poor funding. In the 1960s and early 70s, Nigerian universities had relatively good and adequate funding. Funds were mapped out for research. Lecturers were paid regularly and promptly. The infrastructure was in place and maintained. Students and lecturers had a good and conducive environment for teaching and personal studies. Everybody was therefore gainfully engaged on campus. The result was that Nigerian graduates never really knew what cultism was and they were in demand around the world, unlike today when they have to take additional qualifying tests to be admitted into universities outside the country.

The system began to decay in the early 80s. The military junta struck in 1966 and did not leave until 1979. Again, the military were in power between 1983 and 1999. The whole educational system practically collapsed during this period. Not only were lecturers owed salaries, allowances and grants, the infrastructure in the universities also deteriorated due to lack of maintenance. The limited infrastructure available was overcrowded. Funding to the universities and education generally diminished completely. There were no laboratories or library equipment, no roads,

water and electricity. Everything packed up and the campus became a literal restive dungeon. The military also infiltrated these solemn academic havens with arms and ammunition in a bid to contain any protests from organised student bodies.

All this coincided with a spate of state-sponsored political assassinations, illegal detentions and torture, massive corruption, the closure of universities, the appointment of military sole administrators for universities, the proliferation of ethnic militia, communal clashes, etc., resulting in a culture of violence in which illegal cultism thrived. Since then, our campuses have never been the same again.

All I am saying is that a focused and responsible government must have a clear vision and policy for education, which is the foundation and building block for modern growth and development. Rather than divert and stash billions in foreign accounts, governments should provide adequate funding for education in the country, although I concede that government alone cannot fund university education. But I must warn that the solution or solutions cannot be found in treating cultism in isolation. Where a man is suffering from persistent sleeplessness, the best cure is not to treat the insomnia in isolation but to treat all the other factors that bring it about. It is a known fact that the standard of education in Nigeria has sunk to its lowest levels especially in the last two and half decades. Cultism was a product of multifarious problems that have afflicted public universities, and these afflictions include: poor funding; poor salaries and wages for professors and lecturers; strike action and demonstrations by university staff; indiscipline among members of the university community, including students and lecturers; the inefficiency of the JAMB; a bad economy; a brain drain; the poor quality of students coming from secondary schools; the quota system in student admission; undue interference by the Visitor and Ministry of Education; poor infrastructure; etc.

On University Autonomy

In terms of quality, composition and structure, the educational institutions established during the colonial era had the three essential trappings of being autonomous, collegial and self-governing. All these institutions were meticulously patterned after elite UK universities, such as the University College London and Oxford University. The University of Ibadan (formerly known as University College, Ibadan) was run as a classic UK university, controlled solely through a democratic system operated and run by tenured professors and scholars.

This model of university governance began to fade after independence in Africa, due to several reasons. Chief among them was the amalgamation of incompatible people as nations and the frail and structurally defective federal structure put in place

by the colonial leadership, which began to collapse in the postcolonial period. The lack of functional federalism has affected all sectors, including the education sector.

The breakdown of the elite classic model of university education in Nigeria continued at an escalated rate with the takeover of governments by military dictatorships in many parts of Africa. With military leadership in Nigeria came the absolute concentration of powers in the central government. The military constitutions in Nigeria, Ghana, Uganda, Libya, amongst others, accumulated several executive powers to the central government, thereby strangulating the capacity of the regions and states to independently finance and execute education expansion programmes. Similarly, military governments exercised total control of all sectors including education. The added impetus for military authorities to curtail student demands and protests, and checkmate university staff unions, led to the rise of governmental control and influence over key decisions in the education sector. Routine decisions such as Governing Council constitutions, university quotas, funding policies and structure was scrutinised by the central government. In the periods between 1966 and 1999 when Nigeria was under military rule, Nigerian university systems therefore became increasingly less autonomous, less collegial and highly dependent on government for funding and for decision-making. Government involvement increased with controls over the constitution and membership of governing councils, direct control over the appointment of key administrative officers of universities, and financial controls. Simply put, government became the key stakeholder and decision-maker in Nigeria's university system.

The relics of military rule are unfortunately still present. For example, it is beyond comprehension that almost twenty years after Nigeria returned to democratic governance in 1999, we have retained the 1999 Constitution, which was foisted on the country by the military regime, as our supreme law. This Constitution amongst other things grants excessive control to the federal government to oversee and finance nearly all sectors of the economy. Consequently, the reality in university education in Nigeria today is the perpetual demand by states for more financing from the federal government, and a consistent demand by university authorities for more autonomy to internally decide, run and execute their own programmes and policies.

There is a need to revisit our laws relating to university autonomy in order to truly preserve it.. The unconstitutional and illegal violation of university laws by successive governments, federal and state, ministers and officers of government makes it imperative that we re-examine the role of stakeholders in university administration. Universities have existed for over a thousand years in

other parts of the world: the university of Constantinople, sometimes known as the University of the Palace Hall of Magnaura, was founded in AD 425, the University of Bologna in 1088, and the University of Paris was founded by the Catholic Church in 1150. The first university in Nigeria, the University College, Ibadan, was established in 1948, about seventy years ago. This could be one of the reasons why Nigeria universities, like its toddling democracy, are not only still toddling, they are battling with so many teething problems.

No wonder that what a teacher at an American or British university considers to be a convention, arising from long usage, is seen by Nigerians as a strange development. For instance, the powers of Visitors to our state universities constitute a breach of the autonomy of the universities. We are aware of numerous cases when Visitors exceeded their powers by sacking vice-chancellors, dissolving university councils and appointing council members even when the statutory four years had not expired. The regulatory authorities should look into the legal framework of higher institutions to prevent further erosion of the powers of the Council, how Council members are appointed and who qualifies to be a council member. Appointment to the Council should never be compensation for political support.

Among other obstacles to and opponents of the university autonomy are university lecturers themselves. Most of them have a civil service mentality and are confident that, like civil servants, once they are employed their jobs are assured and their salaries will be paid regardless of their impute. They do not really and sincerely like the idea of autonomy and the competitiveness that this will introduce into the system to their disadvantage. But we cannot forever continue to run away from the truth, and if we are desirous of creating institutions in the true tradition of universities in developed countries of the world, we must be ready to make necessary sacrifices and adopt policies that will propel our institutions into being the centres of learning and generators of ideas that they ought to be.

Among the advantages derivable from granting autonomy to the universities are that:

- They would look for their own funds and exercise freedom in its spending.
- Funds that otherwise would have been spent on universities by government can be used better for the provision of other social amenities.
- Autonomy will minimise comparability-induced conflicts in terms of remuneration among different categories of staff as university will employ staff based on need and remunerate them based on their worth.
- Rewards and salaries will be based on affordable resources.
- It is compatible with privatisation, which is now the global economic policy.

Enhancement of the powers of the National Universities Commission (NUC), the National Board for Technical Education (NBTE) and the National Council on Colleges of Education (NCCE) is important at this stage so that they could be empowered to protect the autonomy of higher institutions and for quality control. There is a need to revisit the powers of these bodies in the approval and establishment of new universities, polytechnics or colleges of education. While granting temporary licences to establish any of these institutions, the period of probation should not be less than five years and no permanent certificate should be granted until a new institution has satisfied the grantors that they have put in place quality structures, teaching equipment, the required number of teachers and have graduated at least two sets of students. The grantors should be empowered to withdraw or suspend the licences where any grantee fails to meet the requirements set down by the grantors.

On Persistent Strike Action in Higher Institutions

Most Nigerians of schoolgoing age are now familiar with the disruptive and destructive phenomenon of strikes in our educational institutions, particularly the universities. Strikes called by the Academic Staff Union of Universities, ASUU, and other trade unions in the university have caused quite a lot of permanent damage to learning and to university reputations. In some cases, the strikes have been so rampant, total and insensitive that courses which ordinarily ought to have been completed in four years cost the students seven or eight years of their precious, young and most productive years. The effect on the lives of the students is inestimable. Their wise and opportune, sometimes less brilliant, colleagues, who go to such countries as Ghana or overseas, complete their educational programmes within time. Some even have their postgraduate degrees while their colleagues in Nigeria, who started their undergraduate courses the same year, are still unsure when they will complete these studies.

There is no doubt that this affects the lives of the students in a permanent and debilitating manner. This is because, unlike factories and corporations that deal with matters and materials, universities deal with human beings. The loss of an hour in a person's life can never be redeemed. A day wasted in a lifetime goes forever because human lives are not gains and profits that can be recouped. The essence of teaching and learning is special, different and peculiar. This is why, in civilised countries of the world, those who are engaged in the business of teaching know the implication of dealing with human lives and seldom go on strike. Unfortunately, in Nigeria, university teachers go on strike for causes that are illogical, unreasonable and illegal. There was the ridiculous strike embarked upon by teachers at the University of Ilorin in 2002 called a 'sympathy strike', to solidarise with their colleagues, some

of whom were found to have been guilty of misconduct and relieved of their jobs. In some cases, university lecturers solicit the 'support' of other trade unions and students whom they encourage to join in their illegal strikes. No doubt this is a strange and blind form of solidarity.

The Political and Constitutional Imperatives for Higher Education Reform

The brand of federalism practised across postcolonial Africa has stifled innovation and has made it difficult for states, the private sector and even universities to attain the required level of financial and structural autonomy needed to drive sustainability. In Nigeria, for example, the uneven allocation of powers and responsibility between the federal and state governments is at the heart of the ongoing agitation for restructuring the country. Federalism has no universally applicable template, as it is a context-specific notion that must be driven by the political and structural realities of every country. However, there are a few common characteristics that are basic and fundamental to a true federation, the most important of which is: an equal distribution or allocation of powers, such that each unit has ultimate sovereignty, with none pre-eminent over or subordinate to the other. Both the federal and state tiers of government have their own separate democratic mandates and must retain substantial autonomy on a wide range of subjects, to enable them to run their governments and manage their affairs.

Given the size and diversity of a heterogeneous nation like Nigeria, it is inconceivable to expect that the federal government can effectively finance and oversee the education sector. Currently, not only does it have strong control over the finances required to run the sector, the Exclusive Legislative List of the 1999 Constitution erroneously places the authority to regulate and 'prescribe minimum standards for education at all levels' under the exclusive preserve of the federal government. Take Canada as an example – the Canadian Constitution categorises education as one of the matters 'of a local nature' and vests the absolute control of education under the exclusive powers of the provinces and not the federal government. The same goes for the United States and Australia, where each of the federal units has absolute autonomy and legislative responsibility to oversee their educational institutions.

This is the kind of reform and restructuring that we need in Nigeria and across Africa. Our current claims to being a federation are not only comical and deceitful, they indeed require urgent surgery. Restructuring is not a call for disunity or conflict; it is a well-informed call for a speedy return to the confederation principles contained in the Independence Constitution that our regional leaders negotiated

with the British between 1957 and 1959. It was on the basis of regional autonomy and true federalism that the regions agreed to go to independence as one united country, and it remains the inevitable antidote for the multifaceted developmental challenges facing the Nigerian nation.

Education must become an enforceable right. Another key reason why successive Nigerian governments have been able to get away with an uncommitted approach to university funding is the fact that the 1999 Constitution fails to provide a robust and enforceable recognition of the rights of every Nigerian to receive quality education. This has to be the starting point of our enquiry. The supreme law must recognise the basic right to education as a justiciable and enforceable right. The current Constitution, foisted on Nigerians by the military in 1999, unscrupulously placed education under Chapter II called: 'The Fundamental Objectives and Directive Principles of State Policy'. This portion of the Constitution indeed graciously and rightly provides that:

> The Government shall strive to eradicate illiteracy; and to this end Government shall, as and when practicable, provide
>
> (a) free, compulsory and universal primary education;
>
> (b) free secondary education;
>
> (c) free university education; and
>
> (d) free adult literacy programme.

While these are all very good and robust provisions, section 6, sub-section (6), paragraph (c) of the same Constitution however provides that the judiciary shall have no powers to decide on any issue or question as to whether any act of omission by any authority or person is in conformity with the Fundamental Objectives and Directive Principles of State Policy. This provision makes it difficult, if not impossible, for citizens to sue the government for failing to provide affordable or quality education. In essence, like a Greek gift, the Constitution in one breath contains wishful aspirations or dreams about education, and in another breath takes it away from the citizens. There is an urgent need to modify these archaic provisions and recognise education as an important and enforceable fundamental human right. By so doing, students will have a robust legal basis to demand an enforcement of their rights to education in courts, rather than resorting to strike action and protests. Without placing a strong constitutional obligation on the Nigerian government to finance education at all levels, the current situation whereby the Nigerian government has failed to achieve the minimum 25 per cent of national budget or 4 per cent of GDP funding threshold, as specified by UNESCO, may continue.

In my capacity as former chairperson of the Committee of Pro-chancellors in Nigeria, I advocate the need to declare a state of emergency in education in Nigeria and much of Africa. To rapidly catch up with the rest of the world in terms of quality education, there is a need to establish national emergency funds for the education sector and designate a significant portion of annual budgets to education, across Africa. For example, committing a minimum 25 per cent of national budget or 4 per cent of GDP each year to education would ensure that our education infrastructure deficit is slowly reduced, while demands for new infrastructure are met. Unfortunately, the Nigerian government is yet to embrace the need for priority funding for higher education, as in several other African countries.

This regrettable lack of political will is also noticeable in the fact that Nigeria, in 2019, had a Sovereign Wealth Fund worth about USD 1.5 billion, being savings from excess crude oil sales. The Nigerian Sovereign Investment Authority has identified four key priority sectors that will benefit from the five-year priority Infrastructure Investment programme of the fund, and they are: agriculture, healthcare, real estate, power and motorways. Despite the huge infrastructure deficit in our education sector, it beats my imagination that education is not recognised as a priority sector that deserves strategic and focused high priority investment. This is a situation that we must all address. Investment in education must be a priority of any responsible nation.

Similarly, African universities must engage with international development partners to explore international funding opportunities. Several organisations, such as the UK's Department for International Development (DFID), the World Bank, USAID, the African Development Bank, Qatar Foundation, the Bill and Melinda Gates Foundation, amongst others, are actively seeking to partner with our universities in areas of financing projects and research efforts.

Around 2016, ABUAD received a USD 40-million expansion loan from the African Development Bank. This pathbreaking fund was designed to fast-track ABUAD's world-class infrastructural development strategy. It was specifically provided to make ABUAD a centre of excellence for tertiary education in Africa by expanding access to high-quality education to over 10,000 students per year. The expansion plan includes the construction of a 400-bed teaching hospital, an industrial research park and a small hydro power (SHP) installation (1.1 MW). In addition to doubling ABUAD's current student capacity, the project will create 250 new staff positions, as well as about 1,000 temporary jobs across construction, supplies and consulting. Full/ partial scholarships and other forms of substantial financial aid was provided to over 500 students beneficiaries during the life of the financing. Our universities can go very far by attracting such international partnership and financing.

It is the task of the century for all African universities to enhance their capacity, readiness and attractiveness for international partnerships. International funding agencies are interested in Africa, but the question is, are we ready and attractive to them? Opportunity, they say, favours only the prepared.

Another essential foundation for achieving sustainable education in Africa is the promotion of a holistic mainstreaming of innovation and agriculture into the teaching curriculum, to encourage students to take control of their own future. The importance of innovation cannot be overemphasised. It is not a mere coincidence that Africa's glorious years in terms of national economic development were when our universities were equally known for delivering significant innovation and research. Zimbabwe was known as the breadbasket of the continent due to expansive agriculture; Nigeria was known as the largest exporter of cocoa and cassava; South Africa was known for high innovation.

I also want to address a serious factor that has affected education sector in postcolonial African states. This factor is peculiar to Africa, and unless we deal with it effectively and decisively our search for sustainable education will end in vain. This peculiar factor is the 'population factor'. It is common knowledge that the population of African countries south of the Sahara is increasing rapidly. The geometric rise in population certainly impacts negatively on the yearly revenue of the government and the amount the government can reasonably budget for education. I believe that African countries should relate the growth in population of their country to the resources available to government in the midst of the many needs they have to provide for. Taking Nigeria as an example, the population of Nigeria, which was only 40 million in 1961 is now 214.5 million.

It is unfortunate that while other countries are curtailing population growth, Africans revel in producing children without caution. When China woke up to the reality of population explosion, it pegged the number of children in a family to one. On the contrary, we continue to give birth to a multitude of children. For example, one recalls the story of 93-year-old Bello Abubakar in Nigeria, who had 97 wives and 185 children. As a matter of fact, Bello at some point had 107 wives but he divorced 10 of them.

The government is called upon to make it abundantly clear that there is a limit in the amount of money it can provide for education among the competing areas of needs. African leaders should stop deceiving the populace that, if elected, they will provide free education. This is how we in Nigeria came about establishing several state universities which are universities only in name and are no better than glorified secondary schools.

Finally, what needs be done Immediately to Restore the Higher Education Legacy in Africa?

The search for qualitative education in postcolonial Africa can only be successful if we invest time, effort and resources in rebuilding our education infrastructure and capacity and, most importantly, reinvigorate the tenets of university autonomy, entrepreneurial education and citizenship education that were hallmarks of the colonial education structures. As Bof Taft, former Governor of Ohio in the US aptly put it: 'We must ensure our system of higher education offers world-class quality for a world-class economy.'

First, there is a need to re-adopt a high investment approach to education. Building a world-class university for a world-class economy requires significant financial resources. It includes constructing and maintaining world-class learning infrastructure, such as adequate buildings, well-equipped lecture rooms, sanitation facilities and safe drinking water; recruiting highly qualified scholars both nationally and internationally; achieving a balanced lecturer–student ratio; and providing cutting-edge IT facilities, laboratories and research centres. All these commitments require significant financial layout. This explains why developed countries spend a sizeable amount of their yearly budget on education. Although the UNESCO High-level Group on Education for All has recommended that every country should spend no less than 15–20 per cent of their annual budget on education, a spending threshold of 30 per cent has been recommended for African countries to catch up and address the current infrastructure deficits.

Unfortunately, however, despite perennial rhetoric by successive African governments on their plans to build world-class universities, many have consistently failed to meet the UNESCO funding benchmark. For example, in Nigeria, a budget of NGN 448.01 billion was allocated to education in 2017, representing only about 6 per cent of the NGN 7.3 trillion budget. Failure to prioritise and devote significant resources to education has resulted in the perennial underfunding of our universities. Our universities simply do not have the financial wherewithal to compete with other universities around the world. With many of our universities struggling to meet their overhead costs, talk of having a significant net annual income is unrealistic. This points to an urgent need for the Nigerian government to inject a financial stimulus into all Nigerian universities to make them self-sufficient.

Furthermore, developed countries have quickly realised that government alone, with all its responsibility for infrastructural development in other sectors, cannot construct and build the required quality universities that will accommodate the citizenry. That is why, in addition to providing robust financial support for public

universities, special financing should be set aside to support the establishment of private universities that can bridge the gap of insufficient space for interested and qualified university candidates. Some of the greatest and most dynamic universities in the world are private. They include Harvard, Yale and Stanford—as well as Afe Babalola University, among others. However, unlike the US universities that have been extensively supported through direct research grants and aid by the American government, the Nigerian government expects private universities to survive or perish at their own expense.

ABUAD is the only institution in the country that currently has what is known as Talent Discovery Directorate where students are helped to discover their strengths early enough and get mentored through the provision of the right type of equipment, until they are nurtured to stardom.

Sadly, however, despite our efforts to spearhead technological research and innovation, Nigerian governments have done nothing to support those achievements and efforts. Instead, ABUAD, like all other private universities has been excluded from accessing university research funds such as the TETfund, which runs into billions of naira annually. The TETfund is made up from a 5 per cent levy on public and private companies to support education. Worse still, government also collects custom duties on education and hospital equipment freely donated by foreign philanthropists!!!

For African universities to compete with other universities across the world there is a need for African governments to devote a significant portion of yearly budgets to revitalising and supporting our universities, both private and public.

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Professor Peter Akinsola Okebukola: An Amazing Teacher, Scientist and Educational Strategist

Biographical Profile

Nigeria, even the world, would have been denied the contributions and services of an excellent science educator if he had been unlucky when he was captured and conscripted into the Biafran army, shortly after the beginning of the Nigerian Civil War. He was still a schoolboy in Sapele, in the then Mid-Western region of Nigeria. He, along with some other boys escaped from the Biafran training camp and finally crossed the creeks in the Niger Delta, where they met a company of Nigerian soldiers in Okitipupa, now in Ondo state. Their tortuous journey through the jungles was not yet at an end. The Nigerian soldiers considered the boys to be 'rebel soldiers' who were out on a spying mission. They were promptly arrested, tried, found guilty of spying and lined up to be executed. Just before the executioner performed his duty, the boys started screaming, 'We are not Ibos!' and Okebukola shouted, 'I am from Ibadan!!' A private lurking in the background responded to the boy, 'Where is your compound in Ibadan?' And the boy shouted, 'Oke Aro!' By a stroke of luck, he was spared from the firing squad.

Peter Akinsola Okebukola was born in Ilesha, Nigeria, on 17 February 1951. He attended St Malachy's College, and Sapele and Remo secondary schools, Shagamu. He graduated from the University of Ibadan in 1973, with a Bachelor's Degree in Science Education. With a federal government scholarship, he continued his education at the same university where he obtained a Master's and PhD degree in the same field. He started his career as a secondary school science

teacher and between 1978 and 1984 was one of the pioneer staffers of the College of Education, Ilesha. He later joined the Lagos State University (LASU) at its inception, where he became a full professor in 1992.

Along the line, Okebukola received specialised training at the Massachusetts Institute of Technology (MIT) and Harvard University. His research areas included higher education and science, computer and environmental education. He is a Fellow of the Science Association of Nigeria (SAN), Fellow and President of the Nigerian Association for Environmental Education and Fellow and past president of the Science Teachers Association of Nigeria. He has won several international gold medals in science, environmental and computer education. Professor Okebukola is noted as the first African to win the prestigious UNESCO Kalinga Prize for the Communication of Science. Eleven of the twenty-seven previous winners of the award are Nobel laureates in science. He is a Fellow of the International Academy of Education and a member of the executive board of the International Association for Research in Science Teaching. He is also the African representative and member of the Board of Directors of the International Council of Associations for Science Education. Between 1997 and 2000, he became the first African to be elected onto the board of the prestigious American National Association of Research in Science Teaching (NARST), a body that charts the direction for science education in America. 'As a member of the NARST board, I was the Chairman of the International Committee. My term in office witnessed a spurt of growth of international membership, and more importantly, in the virility of the committee through initiatives such as the linkage with international science education organisations,' Okebukola revealed.

He has served as team leader of several quality assurance projects involving UNESCO, the African Union, the World Bank, the Association of African Universities and the Global University Network for Innovation (GUNI-Africa). He is the editor of, or on the editorial board of twenty-five national and eighteen international journals that straddle his research areas— science, computer and environmental education. Between 1994 and 1997, he served on the editorial board of the *Journal of Research in Science Teaching* and he was a contributing editor for *West Africa for Science Education*.

Professor Okebukola's research efforts have gravitated around five central themes – higher education, computers in education and e-learning, co-operative learning, metacognitive strategies in science education, and ecocultural influences on the learning of science concepts. He has written over 130 international published works and has made over 120 national and international conference presentations.

Many of his publications can be found in the world's top ten science education, computer education and environmental education journals. Prof. Okebukola was the Dean of the Faculty of Education at Lagos State University, where he was later appointed the director of the Centre for Environment and Science Education. He was also the deputy vice-chancellor and acting vice-chancellor of the same university. He was a visiting professor at the Curtin University of Technology, Perth, Australia.

Professor Okebukola was appointed the executive secretary of the National Universities Commission (NUC) in Nigeria in 2001. While in this position, he superintended the quality assurance of eighty-five universities in Nigeria. His responsibilities included setting new benchmarks and minimum standards for Nigerian universities; conducting a system-wide accreditation of programmes, leading to sanctions for failed programmes; shutting down illegal universities and illegal satellite campuses of universities; contextualising the UNESCO/OECD guidelines on Cross-border Higher Education; registering and establishing twenty new private universities across Nigeria and carrying out their annual quality audit, as well as developing strategies for their institutional accreditation. His tenure witnessed landmark reforms geared at bolstering the quality of higher education, especially in science and technology. Some of his major achievements at NUC are said to be copied in several African countries.

Professor Okebukola is concurrently the chairman of the Council of three Nigerian universities: the National Open University of Nigeria (NOUN); Crawford University; Caleb University. He is also the executive chairman of the Okebukola Science Foundation. In addition, he is the chairman of the advisory council of the American Council for Higher Education International Quality Group (CIQG), whose mandate is to observe the quality assurance of higher education across the world. He was the director of the UNESCO Institute for African Culture and International Understanding. He is the recipient of a number of honorary Doctor of Science (DSc) degrees. He was awarded the national honour of Officer of the Order of the Federal Republic (OFR) in 2007. And he was the leader of the Nigerian academic community at the National Political Reform Conference.

In 2018, Professor Okebukola was appointed by the NUC to a committee to review the country's university system. The committee consists of very credible senior academics, most of whom are former vice-chancellors, former executive secretaries of the NUC, former university pro-chancellors and former ministers of Education. Their responsibility is to recommend measures to reposition the university system in Nigeria to match global standards.

Thoughts on Higher Education Development in Nigeria and Africa

In several publications and public lectures delivered during important events, Prof. Okebukola expressed his views and opinions on higher education development and particularly on the current conditions of the education sector generally in Africa and most especially in Nigeria. After diagnosing the problems of the sector, he prescribes some reforms that could return the sector to the path of excellence. His views are distilled and organised in this section.

On Education as a Lever for Development

It has long been known that education is the antidote to poverty and ignorance and the key for unlocking natural resources. No nation striving for accelerated development does so without huge investment in education. There is a compelling body of research which has concluded that education is the main plank for economic development. Evidence is presented by the story of more than half the members of the league of the world's top fifteen economies which, in spite of a thin dose of natural resources, boosted their economic power through harnessing the power of education. Japan and Korea present examples. How does education serve as a lever for development?

Development of Skills and Knowledge for Growing the Economy and Spawning New Industries

The curriculum of schools through which formal education is provided is delivered in order to tool learners with knowledge, skills, attitudes and values: knowledge and skills to be a good farmer or engineer, for example; attitudes and values such as honesty, objectivity, perseverance and being a good team-player, which are necessary for the workplace. On exiting school at the basic or higher education level, a learner is better prepared to contribute meaningfully to the economy. As everyday experience has shown, the better barber, farmer, restaurant operator or driver is the one that is educated. Armed with the knowledge, skills, attitudes and values developed through education, the educated individual who joins the nation's workforce is able to foster economic growth. Also, new industries are spawned through entrepreneurial skills acquired through education.

Education Engenders Research that Leads to New Inventions

Inventions, which are the pillars of the productive sector of the economy, are products of research. Research skills are honed through education and it is the

educated inventor who comes up with ground-breaking products. Machines used in industry and the engines for producing revenue-generating goods were designed by educated inventors through research. These research efforts translate to new inventions, processes and products, which are boosters for the economy. Microsoft, Toyota and Boeing are some of the institutions that have exploited the power of education to leverage the economy through research.

Education promotes creativity. Education stimulates creativity. In turn, creative individuals are able to generate and apply creative solutions to the nation's economic problems. Creativity is an innate attribute which flowers in settings provided through quality education.

Education as an Antidote to Poverty and Development

A productive pathway to reducing poverty is to increase adult literacy rates. The literate adult is able to develop and use skills which will free him or her from the shackles of poverty. Improved skills for farming, trading and small-scale manufacturing go with literacy. Education is necessary for:

- Promoting health, because knowledge about disease, nutrition and hygiene is the best preventive medicine—and knowledge is the prerequisite for inventing new cures.
- Applying new technologies and the advancement of new knowledge, because it provides the training essential for scientists and other professionals.
- Protecting the environment and ensuring sustainable development, since it gives us knowledge about the web of life and how to preserve it.
- For advancing gender equality, because educating girls and women is the most important factor for empowerment, accelerating development and improving the welfare of children.
- For extending democracy and good governance, because education enables citizens to know their rights and how to make their voices heard.
- For providing a major antidote to religious and political conflict and social unrest.

On the Incremental Collapse of the Nigerian Educational System

Records of the history of education in Nigeria confirm that, by 1903, inhabitants of the Colony of Lagos had mounted a campaign against the British for providing a watered-down education to Nigerians in comparison with education delivered in the same colony about 100 years earlier. In 1939, the colonial administration instituted a panel to review the programmes offered at Yaba Higher College, the first institution of higher learning in Nigeria. The then governor-general was

responding to public comments about the quality of the technical personnel that the college was producing. Fears were being expressed that the colonial government was implementing a deliberate policy to ensure that locally produced middle-level human resources from the college were of poor quality when compared with those trained in equivalent institutions in the UK. The report of the panel led to a review of the curriculum of the Yaba Higher College in 1942.

Post-independence development in education showed periodic uproar over the quality of education being offered in schools. By 1970, a ten-year post-independence review of education reported a steady decline in quality relative to what had existed in the past. The communiqué of the 1981 National Curriculum Conference lamented the poor state of education and recommended the enactment of a National Policy on Education for addressing the shortcomings. This led to the creation of the 6-3-3-4 education system (whereby learners spend six years in primary school, three in lower secondary, three in higher secondary and four in tertiary institutions). At the 1990 National Summit on Education, the lament increased in stridency. For many inhabitants of Nigeria in 2012, the entire sector had collapsed.

But has the sector collapsed? I will invoke a mixture of physics and English in providing an answer. The object 'E' is thrown up into the air; it rises to a height of ten metres and is pulled down by gravity. After five seconds, at an acceleration of 20m-2, the object hits the ground. In this case, the object is education, which during its good days rose into the air. From its zenith it started coming down. The collapsed state is equivalent to when the object finally hits the ground. For our education object, the collapsed state is when all schools are in complete shambles and all products of the school system, from basic to higher level, are worth nothing by way of meeting the human resource needs of the nation. But this scenario is not what we have. We have a poor education system that can be made better. The education object being pulled down at a fast rate can be stopped; we have the opportunity to arrest its fall. We can actually reverse the trajectory of its motion in an upward direction.

Let English kick in now. We have a collapsing not a collapsed education system. Are these semantics of any comfort? Definitely not. What may be of some comfort is that you hear the same refrain virtually everywhere in the world. Very few nations are exempt. Most national reports to UNESCO general conferences hint of quality compromises in their education systems relative to what obtained in the past. The UK, US and other members of the big league are as afflicted as African countries. But there is a major difference. Whereas the developed nations take steps to slow down or arrest declining quality, many sub-Saharan African

countries are engaged more in the rhetoric of arresting the decline than in taking concrete actions to make things better. All you hear is a speech by a governor announcing the number of chairs and textbooks bought for schools and the payment of NECO/WAEC SSCE fees. The question that immediately follows is: How do we arrest the decline so that the sector does not collapse completely?

The Eight Impediments to Quality in the Nigerian Education System

Several factors account for the depressed quality of the Nigerian education system. Eight of them have been isolated by research as being dominant.

Policy Incoherence and Implementation Inconsistency

At the frontline of efforts to maintain or boost quality are well-articulated policies. Policy guidelines form the basis of action by implementers of the education agenda. The head teachers, principals, teachers, inspectors, directors, executive secretaries and directors-general rely on policy guidelines for action. At the local, state and federal levels, policies are enacted to guide educational activities. The umbrella policy is the National Policy on Education. From time to time, ministries of Education at the state and federal capital territory and federal levels enact policies on education in response to current needs.

The gap between policy prescription and practice remains wide. What factors bring this situation about? One is the weak monitoring and evaluation mechanism. A potent inspectorate division which will turn the searchlight on the gaps and cause remedial action to be taken is hardly ever found at federal, state and local government level. Secondly, the financial input into the system that can guarantee good performance is low. Thirdly, the operators of the system claim poor motivation and low morale.

When policy is incoherent and inconsistent, implementers are confused, leading to inaccuracies in practice. In turn, the quality of management and curriculum development is compromised. Incoherence is the typical consequence of a lack of synergy between different levels of education. Inconsistency is the deviation in application of a policy or even a change in the policy for reasons that have not been thought through. In both cases, changes in leadership are the explanatory factor. When a new governor, minister, commissioner, executive secretary, vice-chancellor, dean or head of department comes into office, the typical action in Nigeria is for the policies and practices of the 'old regime', even if good, to be overturned in the spirit of 'making my own mark'.

Teacher Inadequacies (Quality and Quantity)

A major actor in the school setting is the teacher. There is a plethora of evidence (World Bank, 2008; UNESCO, 2011) which suggests that teacher quantity, quality and motivation exert noteworthy effects on a host of school benchmarks. These include enrolment, participation and the achievement of pupils. A shortfall in teacher numbers translates to a high pupil:teacher ratio and severe stress on teachers on the ground. The link between teacher stress and productivity has been established (Okebukola and Jegede 1992). Inadequacy in the number of teachers in the school system could therefore account for the declining quality of education.

Teacher quality is hinged on three knowledge bases: content knowledge, pedagogic knowledge and pedagogic content knowledge. Many teachers in the system are frequently deficient in these knowledge bases. A recent national survey provides empirical proof of this assertion. Participants in the study identified a number of weaknesses that Education graduates exhibited after graduation, which included shallow subject-matter knowledge (that is, poor knowledge of their teaching subjects), inadequate exposure to teaching practice, poor classroom management and control, poor computer literacy skills, inability to communicate effectively in English, a lack of professionalism, a lack of self-reliant and entrepreneurial skills, and a poor attitude to work.

On the matter of teacher quantity, the inadequacy is equally stark. At the basic education level, the system is carrying less than two-thirds of its teacher load. The situation is worse at the higher education level, especially in the universities, with slightly more than half of the full complement of full-time teachers engaged at the universities. Adjunct and associate lectureship predominate in order to enhance the teacher/student ratio.

The existing model and practice of teacher education spews out teachers who are deficient in content and methodology. The motley assortment of outreach and sandwich centres for part-time teacher education have weak pedagogical bases and frameworks. The input into many of these programmes is of doubtful quality. The process is grossly deficient in terms of rigour, quality and quantity of teacher trainers, and the quality of contact. Inevitably, the products of such a system turn out to be weak in content knowledge and pedagogic content knowledge.

At the secondary and higher education levels, teacher quality is not above average. The low rating of the teaching profession is seen in the scanty application for admission into faculties/colleges of Education. In 2012, of more than 1,300,000 applicants for university admission in the UTME, less than five per cent applied for courses in Education. Worse still, only few applications were received for the

colleges of Education. These data point to the lack of interest of candidates for a career in the teaching profession. The pervasive notion is that only the 'academic dregs' make up the bulk of teachers—both in-service and practising. This notion is highly contestable given the high calibre, commitment and industry of a good number of teachers. Unfortunately, this breed of teachers is uncommon. It is worth noting that this dim view of teachers is global (UNESCO 2011).

Closely linked with teacher quality and the calibre of those in the teaching profession is teacher motivation. Extrinsic motivation in terms of salary and reward structure is pitifully low in spite of the attempt at parity with other workers in the civil service. Since 2013 or so, the conditions of service of teachers have been quite fair relative to those of others in the public service. Irregularity in the payment of teachers' salaries, which was a distinctive feature of the 80s and early 90s, is fast fading. Notwithstanding this boost, teachers in Nigeria remain poorly motivated. Workload and the nature and import of the services rendered far outweigh remuneration and social rank. Stakeholders in the education industry should stop treating teachers like 'Libya slaves'. Half the problems that bedevil Nigeria's educational system would be solved if the country engaged quality teachers and provided good welfare schemes for them. There should be a penalty for those, either in public or private organisations, who treat teachers with disdain. We need to penalise, name and shame all employers, public and private, who treat teachers in Nigeria like slaves.

Until the day when the following five strategies are implemented, Nigeria's education system will continue to grope in the dark and national development will fall deeper into an abysmal state.

1. We need to completely revamp the curriculum in all teacher training institutions, including the Nigeria Teachers' Institute (NTI), all colleges of Education and all faculties of Education in our universities. The number of Education courses should be severely decreased and courses for teaching subjects should be hugely increased.
2. All sandwich and distance-learning teacher-training programmes should be suspended, since they train teachers to be mediocre.
3. Only properly trained and certified teachers who hold a Teachers Registration Council of Nigeria (TRCN) certificate should be recruited.
4. Findings have shown that if we engaged quality teachers and provided a good welfare scheme for them, more than half of the problems that face the education system would be solved. Nigeria could copy countries such as Finland and Korea, which revived their economies by taking care of their education system. In those countries, only the very best are admitted for teacher training, and when they graduate, they are paid well and are the envy of other professionals.
5. Those who treat teachers unfairly should be punished.

In Nigeria, the typical faculties of Education at a university admit largely the dregs from the pool of UTME applicants. In 2017, applications for courses in Education and Agriculture were the fewest. Most students wanted to read Medicine, Law, Engineering and what they considered to be prestige courses. Those who studied Education were like horses forced to the river to drink. This set is very shallow in the subjects they are to teach. I was alarmed to hear that what a graduate teacher earns per month in some private secondary schools is between about NGN 20,000 and NGN 15,000.

Teachers must continue to upgrade themselves and run regular competence tests; they should also have more time for teaching practice. Students are no longer as diligent as they used to be; they do not read as they used to and are now more inclined to spend time on social media.

Funding Inadequacies

The poor quality of education in Nigeria is explained in part by the inadequate funding of the system. All stakeholders in education, including parents, students, teachers and development partners, have listed funding inadequacy as a problem. All the communiqués and resolutions of major conferences and summits on the state of education in Nigeria state that funding is an issue that should be addressed in order to get education back on track.

The argument for the adequate funding for education cannot be faulted. However, the political will to be convinced by the argument has been weak. The lack of conviction derives from the notion that you cannot adequately fund education. Indeed, no country in the world is able to adequately fund education. The effort being made is to keep narrowing the gap between what is required for adequate funding and the current level of funding. Between 1999 and 2010, government, notably at the federal level, significantly improved the level of funding. The gap is closing but far from the pace required for a quantum leap in improving quality. Data on funding inadequacies shows that the system had less than a sixth of what is required to deliver quality education at all levels.

Infrastructural/facility Challenges

A conducive learning environment predisposes quality education. Since the learning environment in many Nigerian schools is far from conducive, quality has not been assured. At the basic education level, gross inadequacies in facilities for effective teaching and learning prevail. There are too few primary schools to support full enrolment of primary school-age children. Worse hit are the urban

areas where the dense population of children results in a high pupil:teacher ratio. The shortage of schools and especially classrooms manifests in children receiving instruction under harsh conditions. This could be a key factor in diminishing the motivation of children and their parents for school attendance.

At the senior secondary level, the situation is no different. Old boys and girls who may have visited their secondary school alma mater in the last two years will see the sharp contrast between the facilities they had while at school and the present state of the same facilities. Run-down buildings, broken-down equipment and furniture, and bushy surroundings are typical. The universities are slightly better, having benefitted from recent funding to upgrade facilities. However, this improvement has not cleared the decay in infrastructural facilities in universities. Classrooms, laboratories, libraries and the general environment of most universities are still far from adequate for optimal teaching, learning and research. The more than 320 higher institutions have had to cope with a mammoth 1,300,000 applicants every year. The tight bottleneck at enrolment has caused the sub-sector to witness sharp practices in admission, including examination malpractice. Private sector participation is easing some of the pressure on public schools.

Curriculum Inadequacies

The curriculum at all levels has deficiencies, especially in relation to relevance and adequacy of content to meet the contemporary needs of a knowledge society. It is a delight to note that the National Educational Resources Development Council (NERDC), the National Universities Commission (NUC), the National Board for Technical Education (NBTE) and the National Commission for Colleges of Education (NCCE) are taking steps to update curricula for levels specific to their mandates. These efforts need to be fast-tracked since the bureaucracy involved delays the release of the revised curricula, making them obsolete by the time of approval. The expedient way to go is to load the curricula with enduring skills rather than content that becomes outdated by the next year.

School curricula are now laden with too much junk that is not relevant to modern development. There is little room for projects and fieldwork and there are few opportunities for experiments and for developing the skills of a scientist. There is therefore the need to trim the Nigerian education curriculum to lay the emphasis on twenty-first-century skills. All higher education regulatory bodies could be collapsed into a Tertiary Education Council to streamline operations and ensure fluency.

Poor Curriculum Delivery

Quality in education is lowered by poor curriculum delivery. Harsh and intimidating classroom interactions engender fear in pupils and hatred for school. Classroom interactions usually take four forms: teacher–student, student–student, teacher–material and student–material. The four modes occur simultaneously as teacher–student–material in a constructive learning setting. However, what predominates in most classrooms, from primary to postgraduate, is the lecture, which is the unidirectional mode. At the concrete operational stage of cognitive development, which most primary and secondary school students are at, this mode of instruction contra-indicates meaningful learning. The education curriculum in Nigeria is cumbersome and the method of training teachers is defective and not in tune with modern trends. In addition, learning facilities are lacking, which means students have become indolent. Teacher preparation has been worsened by the sandwich programmes, which produce teachers who have no depth of knowledge of their subject. I propose that Education, as a degree programme, be extended to five years and that student teachers concentrate on their core subject for four years, and in the fifth year concentrate on teaching skills.

The use of the lecture method can be traced to poor-quality preparation and resource inadequacy. Good-quality teachers are known to be innovative in their teaching methods even in the face of an acute shortage of teaching materials. Healthy classroom transaction is also stifled by a high pupil:teacher ratio. In many urban centres, classrooms, especially in primary and secondary schools, are overcrowded. As many as 100 pupils are crammed into some classrooms. In mixed schools, as we have in nearly all the primary schools and in most secondary schools, the girl-child is often disadvantaged in such large classes. Having to struggle with boys for space, and cope with their characteristic intimidation, leaves many girls at a disadvantage. In rural areas, with reportedly fewer pupils in a class, classroom interaction is not any better. This, however, is for different reasons. One of these is the relatively lower qualification of teachers in rural areas. Other reasons include a lower level of teacher motivation and inadequate resources.

Classroom observational studies have shown that girls are not given enough opportunity for classroom participation as boys, by both male and female teachers. Boys are encouraged to ask and answer questions, to manipulate materials and to lead groups. In the 1992 review of the studies on science classroom interactions in Nigerian primary and secondary schools, it was found that girls are given less time on tasks than boys. Girls also have fewer opportunities to learn. These factors hinder the school performance of the girl-child.

There is scant use of new technologies. In addition, equipment shortages do not permit individual work and theory is favoured over practice. The overall result is that performance in school and public examinations is compromised.

The Lack of a Reading Culture

A reading culture, as Okebukola (2012) notes, refers to the practice of reading for the love of it. It is about making reading a way of life because of the enjoyment, interest and motivation derived from it. It is the tradition of people who place a high premium on books such that they become active, engaged and avid readers. Over time, people with a reading culture attain proficiency in reading by acquiring the basic skills necessary for learning to read and reading to learn. Learning to read includes learning to encode and decode words, spell, construct sentences, figure out the mechanics of paragraphs and develop an understanding of grammar. As readers progress, they refine and expand these skills.

Many of our students are poor readers. But while they shun reading, they are, however, hooked on social networking, videos and music. Our recent study shows that less than 2 per cent of university students in two south-western universities read at least one newspaper a day, about 8 per cent read textbooks relating to their course, and over 90 per cent read only their sketchy lecture notes (Okebukola 2012). The problem is worse at the lower levels of the education system. It is this poor culture of reading that impacts negatively on students' performance in school and public examinations.

Social Vices

Examination malpractice, cultism and sexual harassment are social vices that have crept from the larger society into our educational system. These vices, especially examination malpractice, exert a toll on the quality of products from the system.

After the foregoing quick survey of the eight obstacles to the progress of our education system, we should highlight the chain reactions that some of them trigger.

On the Chain Reaction of the Obstacles

In a chain reaction, an event kicks off and triggers another, and then another, looping to the original event and the 'chain' goes on. If not broken, the reaction continues until the original reactants are consumed. Let's discuss the effects of three triggers on education delivery today. These are: the dilution of teacher quality, poor resourcing of schools, and the tardiness in the pace of diffusion of ICT in schools.

As stated earlier, when we highlighted the top eight impediments to the delivery of quality education in Nigeria, teacher quality is one of the monsters eating up the educational system. The chain reaction it triggers begins with poor teaching of kids in school. The poorly taught underperform in school and public examinations. Underperformance lands them outside the higher education net. As dropouts, they are deficient in the knowledge and skills that guarantee a high-level contribution to socioeconomic development. They are guaranteed places in menial jobs and they add to the stock of nauseous miscreants and 'area' boys and girls (gangs of children and teenagers). The chain is further triggered down the line as these people swell the ranks of robbers and kidnappers and end up fuelling social unrest.

Some links in the chain of kids taught poorly by poor-quality teachers show up as pre-NCE candidates in colleges of Education with a sprinkle of passes amidst a preponderance of F9 grades in the WAEC/NECO senior school certificate result. These weak candidates manoeuvre their way up the NCE-training ladder, and in no time obtain two merit-level passes at the NCE level. Now qualified for a degree course, such students soon secure admission into a Faculty of Education, a rather easy process since most are starved of applicants. Further reaction on this chain shows the weak candidate obtaining a first degree, then a second and then a PhD. The Dr 'So and So' now becomes a teacher in a university. With the abundance of spurious 'international journals' floating around, he/she ends up as a professor. It is this poor-quality professor who completes the loop of the chain reaction and, of course, sets another in motion.

The chain reaction of poor resourcing of schools starts with poor curriculum delivery and the inability of students to learn practical skills in their subject areas. It triggers an unfriendly environment for learning, making students abhor school. The collateral effect of reducing access is noteworthy. The number of street children swells, raising crime rates. High crime rates deter foreign investors and discourage tourism, which exerts a significant toll on the economy. This then triggers less money being available to the educational system and less money to provide resources, and the chain reaction completes its loop and begins again. Some refer to these chain reactions as vicious cycles. We can see such cycles playing out before our very eyes and we need to break them or they will trigger a collapse of the educational system. We shall examine some proposals for demolishing the obstacles to progress and seek a potent 'axe' to break the deleterious chain reactions and vicious cycles. Here I propose what I have labeled the 'redemption plan'.

On a Redemption Plan to Rescue Nigerian Education from the Abyss

Shedding the Fat from the Curriculum

The curriculum at all levels of the education system is laden with too many topics that could be labelled as junk in the light of modern developments in the discipline. Teachers often describe the curriculum as overloaded. When we compare curricula in more far-sighted countries, we boast that ours are 'rich' and students to whom the curricula are delivered are 'well-grounded'. Beneficiaries of the Nigerian curricula who study overseas have a different story to tell. While accepting that the content gives them a fair theoretical grounding, the much-desired process and hands-on skills are grossly deficient. For instance, the high-school science curricula in the US and UK have about half the theoretical content load that their Nigerian equivalents have. American and British students are given a wide vista of opportunities for laboratory work, indoor and outdoor projects, and extensive exploration. The Nigerian student is busy cramming formulae and struggling to cover the huge number of topics in the WAEC and NECO curricula before the senior school certificate examination comes knocking.

The redemption plan for the curriculum is to shed all those topics that weigh heavily on the content load of the curriculum to free space for process skills and projects. This plan has implications for resource availability. If the school has a resource deficiency, as most do in Nigeria, steps will need to be taken to clear this hurdle before the revised curriculum can work.

Reforming the Curriculum to Respond to the Jobs of the Future

In the next ten years, the jobs that will be available for the products of our school system nationally and globally will be quite different from those we have today. Our curriculum is aimed at producing graduates for the jobs that were available yesterday and is far from addressing future needs. The curriculum at all levels should be reformed to respond to the job opportunities of the future. Such future jobs can be deduced from empirical data that makes projections about the future of national and global economies and job opportunities.

Entrepreneurial Education at all Levels

A key factor in propelling the economy is the promotion of an entrepreneurial culture. The education sector provides the platform for inculcating an entrepreneurial spirit and the learning experiences to acquire entrepreneurial skills.

While entrepreneurship should be a goal at the basic and higher education levels, it is only at the higher education level, especially the universities, that attention is paid to entrepreneurial education. The National Universities Commission has taken giant steps in promoting entrepreneurial education in the universities. While these efforts need to be strengthened, other levels of education should take their cue from this lead.

At the basic education level, junior secondary students should be given opportunities in school to learn the rudiments of entrepreneurship. Some are already engaged in trading activities after school and during the holidays. They could be taught, as part of the school curriculum, to be better at such trading activities. The same proposal applies to senior secondary students. Such students will be better prepared for the entrepreneurial studies programme in universities. The collateral advantage is that they will be busy earning some income and not be let loose on society as jobless miscreants.

Colleges of Education should prepare teachers for teaching entrepreneurial studies at the basic education level. The polytechnics and universities should produce graduates in all disciplines who have had entrepreneurial training as part of their certificate, diploma or degree programme.

Improving the Relevance of the Curriculum

There are several personal and group skills that are needed for survival in the twenty-first century. These include peace-building, religious tolerance, learning to collaborate with others and connecting through technology, multimodal learning, creativity, critical thinking, problem-solving, decision-making and learning, citizenship, life and career, and personal and social responsibility. The curricula of our schools hardly address such skills, yet we expect that our graduates will not sink in such a world. To ensure that our basic and higher education students are well tooled for this world, steps should be taken at all levels of the educational system to incorporate such skills in the curriculum.

In sum, the kind of curriculum that the redemption plan envisages is one that is light on theoretical content, rich in opportunities for practical skills and makes ample provision for training our youth for the jobs of the future. To implement this plan, we need a national curriculum conference that will set the national framework into which the NERDC, NUC, NBTE and NCCE and other curriculum development agencies will fit their revision.

A Redemption Plan for Teacher Education

We cannot hope for a top-quality education system if we staff our schools with second-rate teachers. We need a profession full of inspiring, innovative, creative and knowledgeable instructors. How can we reformat our Teacher Education programmes in a way that will close the gap between the expected and the observed? Keeping in mind that the quality of teachers is largely dependent on the quality of training (pre-service and in-service), we shall now discuss reforms in Teacher Education that can rapidly bolster quality. The following reforms are proposed.

A Reduction in the Load of the Education Course

Education courses for those wishing to be subject teachers should be a maximum 15 per cent of the total course load. For instance, if the total number of units (TNU) for a four-year degree programme is 120, all Education courses from levels 100 to 400 should not exceed a total of 18 units. Interview data from the 2004–2006 national survey showed a preference for the spread of the 18 units as shown:

• Foundation courses (Psychology, History, Curriculum, Philosophy)	=	4
• Methodology course	=	8
• Teaching practice	=	4
• Project	=	2
Total	=	18

Increase in the Load of the Teaching Subject Course

In order to ensure a proper grounding of teachers in their subject area, about 80 per cent of the course load should be assigned to courses in the teaching subject(s). Courses that relate to senior school certificate topics that students find difficult to learn, such as Biology, Chemistry and Physics, should be made compulsory for teacher trainees.

More time for teaching practice: A minimum of twelve weeks of full-contact teaching practice should be implemented for the effective preparation of graduate teachers. One year of teaching practice would be ideal. In most colleges of Education and universities, in spite of the provision for a twelve-week teaching practice, the actual practice lasts barely three weeks. Supervision is also poor, leading to shallow field experience for the teacher trainees.

Avoiding early specialisation: Specialisations at the undergraduate level, such as Educational Management/Educational Administration and Planning, and Guidance and Counselling should be discontinued in favour of specialisation at the postgraduate level.

Avoiding admitting students without five SSCE credits: The admission requirements should be absolute in excluding candidates who do not have five credit-level passes in the SSCE. In some universities, consideration is given to candidates who have three SSCE credits and two NCE merits or to those who pass pre-degree and diploma programmes in lieu of the five SSCE credits. These considerations should be scrapped.

Limiting the number of sandwich/part-time students: It has been found that over 60 per cent of the poor-quality teachers in the secondary school system are trained through sandwich/part-time programmes. In order to improve quality, the number of such candidates admitted into faculties of Education should be drastically reduced.

Periodic training in modern methods of teaching: Staff in the faculties of Education in universities and in colleges of Education should be exemplary teachers, yet many are regarded as the worst teachers on campus. They are, thus, poor role models for the teacher trainees. All teachers in a faculty/college of Education should undergo periodic training on modern methods of teaching.

Exemplary dressing and conduct: Some teachers in the faculties/colleges of Education are careless with their appearance. All teachers should be exemplary in appearance and conduct. Institutes of Education should be free of examination malpractice, sexual harassment and cultism.

Minimum qualification for teaching: For the lecturer Grade II position and above, the NUC minimum standard of a PhD for teaching in the Nigerian university system should continue to be enforced. All colleges of Education and polytechnics aspiring to degree-awarding status should adopt the PhD minimum standard. For others, the policy of not promoting beyond Principal Lecturer Grade without a PhD is worth considering.

Training in pedagogical skills: All higher education teachers without a teaching qualification should be given on-the-job pedagogic training. Regardless of discipline, there should be continued professional development to equip all teachers with skills in modern methods of teaching, especially the use of new technologies.

Training in research skills: Research skills need to be continuously upgraded in light of the flux in research techniques and modernity of equipment. At least once every two years, all higher education academic staff should have an opportunity for research skill upgrading.

Mentoring: Experienced academics are underutilised, especially with regard to nurturing young academics. The NCCE, NBTE and NUC should encourage institutions to formulate and implement a sustainable mentoring programme in colleges of Education, polytechnics and universities. Experienced professionals (teachers, principals and inspectors) should be invited periodically to talk to pre-service teachers to stimulate and motivate their interest in teaching as a career.

Training quantity: There is an urgent need to double the current rate of teacher production at the basic and higher education levels. This is obviously a tall order given the aversion of candidates for certificates, diplomas and degrees in education. However, through a battery of incentives, enrolment into teacher training institutions at all levels can be bolstered. These incentives could include:

- Reducing by half the current tuition fee for training in Education at colleges of Education, polytechnics and universities
- Automatic bursary awards for all education students
- An enhanced postgraduation salary package for teachers.

Teacher licensing and revalidation of the licence: A licensing system should be established for teachers by the Teachers Registration Council of Nigeria (TRCN). The teacher licence should have a maximum life of five years. Renewal should be based on the successful completion of a recertification examination or evidence of in-service training within the five-year period.

A Redemption Plan for Facilities

Phased Development of Standard Public Schools

When measured against international standards, over 90 per cent of public primary and secondary schools in Nigeria are sub-standard. The quality of buildings, the quality of infrastructure, quality and quantity of furniture and fittings, and the quality of landscaping and general school environment fail to match what you find in equivalent schools in Europe, North America, Asia and in a number of other African countries, especially South Africa and Egypt. Government should activate and implement a plan for gradually phasing out poor-quality schools, replacing them with schools that meet international standards. If a commitment to this scheme is of interest to government, this should be evident through building at least two such standard schools in each local government every year. In ten years, a physical landscape befitting the school system of the rebranded 'giant of Africa' would emerge. No doubt, the deployment of the huge unaccessed funds in the Universal Basic Education Commission (UBEC) could move the project far. The

estimate is that it will cost about NGN 1.8 billion to build one standard secondary school for 2,000 students and NGN 200 million for paying staff salaries and running the school per year. In four years of a state administration the total cost for building and running such a standard school for four years is NGN 2.6 billion. My doubts are, however, strong that the political will to push this idea beyond the concept stage is there. Even if it takes off, sustainability looms as an issue.

Provision of an Enabling Environment for the Use of ICT

The deployment of ICT and new technologies including the use of the Internet is catalytic for the delivery of quality education. It should be a priority for government to provide this. An enabling environment includes the enactment of an ICT policy for education; provision of infrastructure, such as stable electricity, security, and affordable Internet connectivity; computer labs in schools; a good ICT maintenance system; and capacity-building in ICT use for teachers and managers of our educational institutions.

The common trend in state governments is to announce massive purchases of computers and distribution to schools amid fanfare and commissioning ceremonies. But the lack of provision of the enabling environment highlighted above results in the computers finding little use and picking up dust less than a year later: inadequacies in power supply limit use; the high cost of Internet bandwidth hinders connectivity; teachers and principals who received flimsy training at the point of commissioning soon relapse into ICT illiteracy. The computer turns out to be a piece of hardly used furniture in the principal's office and on the desks of teachers.

Partnering with the private sector, government should make new technologies for teaching and learning available in our schools on an affordable and sustainable basis. The examples provided by indigenous IT companies such as OMATEK and Zinox should be scaled up. Continuous ICT training for teachers and heads of institutions should be implemented through public-private partnerships. Advantage should also be taken of schemes for bringing down bandwidth cost. This will foster the use of the Internet for teaching, learning and research. Also, full use should be made of mobile devices for teaching and learning, especially cellphones, which are owned by a sizeable proportion of students.

A Redemption Plan for Access to University Education

A vexing issue for candidates and their parents angling for university education is the difficulty of securing placement in the more than 128 universities in Nigeria. About 1,400,000 candidates took the 2013 UTME. Like the difficulty of the camel

passing through the eye of the needle, only a small fraction secured placement. I propose a six-step redemption plan to meet this challenge. At the outset, though, we must set a national goal for our higher education participation rate (HEPR). In simple terms, the HEPR is the proportion of the eligible population that has access to higher education. Africa's higher education participation rate is currently 10 per cent, while in the United States and Europe it hovers around 50 to 60 per cent. South Africa's rate is 18 per cent with a plan to push it to 20 per cent. Britain has set 50 per cent as its HEPR. Data computed from the UNESCO Institute of Statistics sources puts Nigeria's HEPR at about 8 per cent.

Nigeria should set 20 per cent as a target to be met by 2025. To meet this target, we need to achieve at least 10 per cent annual growth in enrolment. The solution, however, is not to admit many more students into the presently underresourced universities. By doing so, we shall end up with nothing more than degree mills and a lower quality of graduates.

In 2022, over 900,000 candidates will fail to secure admission into Nigeria's universities. Working on the premise that about 60 per cent will be suitably qualified, we shall have a large army of about 500,000 roaming the streets after the UTME admission season. An annual 8 to 9 per cent increase in the number of candidates who take the UTME will translate into millions who are not able to gain admission, a few years down the road. The attendant societal problems emanating from this 'mark-time' phenomenon are enormous. What options do we have?

The first component of the plan is to embark on a massive upgrading of physical facilities at existing universities to take in at least an additional 1,000 students per year. This would involve more classrooms, laboratories, workshops, libraries and offices.

Staff recruitment of the quantity and quality to match the annual growth in student enrolment should be undertaken. Hence, with the successful scaling of NUC due diligence on the expanded facilities and increased human resources, carrying capacity would be increased to 1,000. The university could, thereafter, proceed to enrol an additional 1,000 students during the next admission season. In ten years, a typical university would have added about 10,000 students to its baseline stock. In terms of cost per university, this option translates to an annual average of NGN 900 million for building, equipment and staffing. In ten years, each university would require NGN 9 billion for the expansion project. The long and short of the story is that if we want a 10 per cent annual increase in enrolment in the nation's 128 public and private universities, we will require NGN 988 billion in ten years (adjusted for the age of the university).

Having added about one million places in ten years through the expansion of existing universities, the second component of the plan is to add 500,000 more by gradually increasing the number of universities. Thirty additional universities could be licensed in ten years by the NUC. Fifteen of these should be under private proprietorship and the other fifteen would emerge from upgrading selected polytechnics and colleges of Education to degree-awarding institutions.

The third component is to strengthen the National Open University of Nigeria to be able to take in many more eligible students, in the region of about 800,000 in ten years. Thus, in ten years, the Nigerian university system would have expanded to almost triple its present enrolment capacity. This will put a smile on the faces of seekers of university admission and bolster the country's higher education participation rate.

The fourth component of the plan is to implement the recommendation of the 2002 National Summit on Higher Education, approved by the Federal Executive Council, on the re-introduction of the Higher School Certificate (HSC). The HSC will serve as the holding bay for the teeming products of senior secondary school and the filter for academically able students. It will be the mould to shape students' physical, emotional and intellectual maturity. The 25 to 30 per cent who will scale that HSC hurdle will comfortably be absorbed by the expanded university system.

The fifth component of the plan is to allow access only to the high performers in the Senior School Certificate Examination. Rather than opening university gates to 400,000 candidates with five credit-level passes achieved at two sittings, we suggest that admission should be given only to those who obtain five credits at just one sitting. This would be combined with excellent performance in the post-UTME screening exercise. Calculations for this plan using 2010 data have shown that the number of eligible candidates would be sliced by half. We would therefore have 200,000 candidates to place rather than 400,000. The result would be better-quality students as raw materials for our universities and, hopefully, better-quality graduates.

The sixth component of the plan is to make polytechnics and colleges of Education more attractive to candidates for teacher-education programmes. This would ease the pressure on universities. Equivalence with a Bachelor's degree granted to the HND, and the implementation of the teachers' salary scale, are some of the strategies that would make these institutions attractive to candidate students.

Redemption Plan for Quality Assurance

Establishment of a National Quality Assurance and Monitoring System

There currently exist pockets of quality assurance agencies, with no operational link between any two for the purpose of harmonising minimum standards appropriate for each level of the 6-3-3-4 system. Such linkages are important since the quality of basic education is essential for the senior secondary level. In turn, the quality of senior secondary school-leavers has implications for the universities, polytechnics and colleges of Education. The acerbic comments and complaints by higher education practitioners about the quality of the products from secondary schools will be diminished if there were a National Quality Assurance and Monitoring System that could synchronise minimum standards across the system. The elements making up the system would be the Inspectorate Service at the state and federal levels, the NUC, NBTE and NCCE. The statutory quality assurance functions of the different agencies would not be thinned down by this arrangement. The strength of the arrangement would be in the component elements learning from one another and collaborating in monitoring quality system-wide rather than in individual cocoons of their sub-sector. When the Director of Inspectorate in Kaduna State is an observer in the NUC accreditation exercise of Ahmadu Bello University, Zaria, he/she will better appreciate the demand by higher education for quality from the secondary school system. Reciprocally, NUC, NBTE and NCCE officials, by this arrangement, should participate in secondary school inspections on a random selection basis. From this team, the Ministry of Education would receive fact-based advice from the higher education sub-sector on how best to prepare students for the post-secondary experience.

Since a poor reading culture impacts negatively on learning, I offer a few suggestions for bolstering reading culture, based on my personal experience in the university system.

Read and summarise a chapter in a course textbook per week: All students, as part of continuous assessment, every two weeks read an article or chapter in a course textbook on a topic that will be taught or has been taught, and turn in a two-page summary of it. All submissions are emailed and graded by the lecturer in time for the next assignment. I did this in 2010 and 2011 for some of my undergraduate classes at Lagos state university, which had enrolled over 300 students, and I 'nearly died'. It was strenuous for me as well as for the students. A few years later, I received commendation emails from many of the students saying that the exercise boosted their tendency to read. My reading culture also jumped several percentage points!

Compulsory course on reading: As proposed by Okebukola (2012), the NUC should include a compulsory course on reading as part of its minimum standard for all courses. This should be a standalone course or, at the least, a component of the Use of English aspect of General Studies. This course should contain the following elements, among others:

- Advanced reading skills and methods
- Reading for instruction and reading for pleasure
- Strategies for content-area reading and comprehension
- Developing the affective aspects of reading.

Dyads, triads and other multiple groups: A lecturer of mine at the University of Ibadan used the dyadic method to immense advantage in boosting our reading culture. This method involves randomly assigning students into two-member groups. Each group reads an article related to the topics in the course. At least three articles should be read by each group. One group member presents the summary in class, in rotation. Although this method is most suited to small postgraduate classes, I used it to good effect in some of my undergraduate classes. Group membership of more than two is advised for large classes—perhaps three- or five-member groups. The strain on the teacher is less since groups are involved rather than individual students.

Class debate: Students battle with the number of courses to make up the 120 units needed for graduation. Inserting class debates into the already crowded schedule appears unreasonable. Yet it is reasonable enough if our goal is to get them to show more seriousness about reading. Organising a debate for just 15 minutes every three or four lectures will not do any harm. This would involve announcing a topic to be researched by members of the class. Debate topics should be related to the content of the course. No assignment of who speaks for or against is made until a few minutes before the start of the debate. This way, all students will have to read, preparing to be called to speak. Over time, the students will gradually improve their habit of reading.

Award for 'Most-voracious Reader': Each department could institute an award for the student who reads the most for each level (100 to 500), and overall, regardless of level. A university-based award is a good addition. A departmental committee could be set up to work out the modalities for the award, which would include evidence of having read the books listed. For want of a title, I have labelled this the 'Most-Voracious Reader' award! It is of course better called the 'Best Reader Award'.

On the Future of Science and Technology in Nigeria

I was the Focus Area Leader and a member of the Nigerian National Task Force on the UNESCO Project 2000+. The Year 2050 was given as a feasible target date by which science and technology would have been taken to every part of Nigeria. The choice of that date was predicated very strongly on the ebbing desire of the Nigerian government to boost science and technology in Nigeria. My team was convinced that, over fifty years, Nigeria could surpass Europe and America in science and technology. Nigeria possesses an overwhelming abundance of high-level expertise in most areas of scientific endeavour in virtually all science research institutions in the world. A goal-oriented system that draws on this base of Nigerian scientists may be all that is needed to lift Nigeria off the ground in the field of science and technology. However, if Nigeria does not move fast over the next few years, it will be too far off the track to even think of competing in science and technology.

Challenges to Government Investment in Science

In the 1970s, the Nigerian government had more than USD 40 billion in crude oil earnings to spend on less than 60 million people every year; now, the country earns less than USD 10 billion for its teeming 200 million or so people. The indications are that Nigeria's income base may actually shrink further if the population continues to increase. Even if the income base is maintained, the demand on the national income for the extra mouths to feed and clothe may make it impossible to invest in science and technology. Government needs to be determined to boost science and technology at all costs. I advocate for the proper mobilisation of science and technology education in the population and believe that the National Agency for Science and Engineering Infrastructure (NASENI) has a major role to play in this, for which it should be well equipped by the government.

Boosting Science and Technology on the African Continent

I believe that the establishment of national, sub-regional and regional centres of excellence in various spheres of science in countries across Africa holds a future for science and technology in Africa. Such centres should have remunerative and infrastructural packages that would be attractive to the thousands of top-level African experts currently scattered across the best research laboratories worldwide. The centres should be real centres of excellence, not those we have presently, which are centres of excellence only in name. Such centres should be immunised against

the rot and decay prevalent in African countries. They should be provided with all those things that are lacking in our society and which have made it virtually impossible for Africa to produce any Nobel-winning scientist, despite the fact that Africans constitute a large percentage of the supporting scientists in most Nobel-winning research. Only concerted efforts for development at the continental level can reverse the situation in which African scientists are just the supporting cast to the main events.

The Need for an Elite Corps of Scientists

Quantity needs to be balanced with quality, and the Nigerian university system should play a more active role in using science and technology as a tool for fast-paced development in Nigeria. In spite of the desire for an upswing in the number of scientists, there is a greater need for an elite corps of scientists at the cutting edge of research, such as is found at the Los Alamos National Laboratory and NASA Jet Propulsion laboratories in the US. It is not in doubt that a sprinkle of such scientists abounds, but the insignificance of their numbers, their lack of current research skills and deficiency in the use of new-generation instruments impose limitations on their contribution to breaking new ground in science and technology for development.

The giant strides attained by developed nations in harnessing the power of science and technology have come about largely through the ingenuity and efforts of a handful of top scientists. It took the Wright Brothers in December 1903 to innovate the development of the airplane, Thomas Edison in 1925 to invent the light bulb, and Steve Jobs in the 1990s to invent Apple products, which have evolved into our modern-day iPads. Nigeria needs to cultivate and nurture such scientists. During my visits to the Massachusetts Institute of Technology (MIT) and other top universities in the US and UK, I saw batches of young scientists from China, Japan, South Korea and India undertake undergraduate, doctoral and postdoctoral studies sponsored in full by their governments. The sustenance of these schemes over the years has guaranteed a steady supply of scientists to different productive sectors of the economy of these countries, especially in manufacturing, IT, agriculture, power and defence. The case of Iran, with almost 100 per cent of indigenous scientists working on its nuclear programme, stands out.

A Strategy for indigenising Science and Technology

In adapting the Western model, which approximates the training of Special Forces in the military, a training scheme for a Nigerian Elite Corps of Scientists (ECSS) should be instituted. Beneficiaries would be carefully selected. Just as we have in the NUC PRESSID programme, first-class graduates in science, technology and engineering in critical areas of national development, such as power, IT, green energy and oil and gas, should be sent for training at top-ranked universities in the world. When complemented with excellent research laboratories and juicy remuneration on completion of their overseas training, these scientists would become the future ground-breakers in science and technology for Nigeria, and indeed for global development. The Federal Ministry of Science and Technology and the Federal Ministry of Education should partner in implementing the programme, which could be a modification to existing practice.

Private Sector and Other Stakeholders' Participation in Science and Technology Education

Presently, the participation of the private sector in supporting public efforts in science and technology is unimpressive. Our universities should upgrade their research delivery systems to encourage patronage by the private sector. We should adapt technology to local circumstances. Even when technologies are imported, research is necessary to make them work in local settings.

All stakeholders in education have a role to play in redeeming the poor image of the sector. Governments, teachers, parents, learners, the media, religious organisations, the private sector, non-governmental organisations, local communities, and others, should play a part. It is the responsibility of government to lay down policies for the smooth running of the educational system. Beyond policy formulation, standard-setting and policy implementation are other roles. Within this global picture, governments (federal, state and local) should carry the funding burden of between 70 and 80 per cent of the educational sector of a country at our stage of development.

On policy formulation, cross-national comparisons confirm that the Nigerian National Policy on Education and policies enacted at state and local government levels are among the best in the world. But when viewed in the light that the system in which these good policies are enacted is among the weakest in the world, we cannot look too far to isolate deficiency in policy implementation as the culprit. On most policy prescriptions, including quality and quantity of infrastructure, quality and

quantity of teachers, and quality of instructional delivery, the system has failed. The question that immediately arises is, why? We have highlighted eight reasons above.

Let us look at the inability of government to provide basic infrastructure and teaching/learning facilities for quality education at all levels of the system. If you come with me on a journey to a country where the leadership is serious about education, you will find huge disparities with what exists in Nigeria. We will not go outside Africa, so come with me to Botswana, South Africa and Egypt. We enter a public secondary school. Here you find buildings that resemble those at the University of Ibadan. The classroom furniture is student-friendly, electricity and water are available on an uninterrupted basis, technology is in all classrooms, laboratories are well furnished and stocked with the latest equipment, the campus is beautifully landscaped, staff offices are well equipped, the school library is a stand-alone, purpose-built structure with vast digital resources, and there is a school clinic. In contrast, the typical Nigerian public secondary school lacks the basic infrastructure of electricity and water, has an exceedingly poor classroom environment with severe inadequacies in library and laboratory facilities. The same contrast that we have seen for the secondary school is replicated at the basic and higher educational levels.

What I found intriguing over the last thirty years, when I had opportunities to visit states on some official engagements, were the speeches of governors and Honourable Commissioners for Education. About 90 per cent of the speeches, on average, had the same refrain: 'We have built x number of classrooms, bought x million naira worth of laboratory equipment and library books, and recruited x number of science teachers …'. Beyond such political talk, what you find on the ground is a mismatch. A friend described the scenario of our leaders visiting countries with exemplary practices in education. On the way back they were fired with enthusiasm to replicate what they had seen and the lessons learned. On arrival in Nigeria, as soon as the immigration official stamped their passports, all the enthusiasm vanished like mist in the early morning sun. They returned to their old ways of near-empty promises.

It is helpful to share a corrective formula derived from over forty years of research with thirty-five countries. It is the systems formula, which rests on the assumption that education is a system and any attempt to improve its quality should factor in ALL the elements of input, process and output of the system. The input variables include the quantity, quality and remuneration of teachers; relevance and currency of the curriculum; adequacy of facilities, including classrooms, laboratories and libraries; adequacy of funding; students' cognitive potential and attitude to work; and parental support for the delivery of education. The process variables include the quality of teaching in the classroom or in practical sessions

in laboratories; the efficiency of staff; and the quality of school management, including the management style of the head teacher, principal, vice-chancellor or rector. The output variables are the levels of achievement in terms of knowledge skills and attitudes. The complete systems model has about fifty variables.

The systems intervention is a three-step process. I will avoid the mathematical model and present the outline of the process. First, baseline data is collected on each of the input, process and output variables. For instance, if the goal is to arrest the decline in the quality of education in Oyo State or in Nigeria, data on the fifty or so variables in the model are collected for Oyo State or for Nigeria, as the case may be. We collect data such as the number of students and teachers enrolled; parental background and opportunity to learn of the students; qualification, gender and teaching experience of the teachers; quantum of funds made available to schools; management styles of school administrators; school location; curriculum content; quantity and quality of facilities, such as libraries, laboratories and classrooms; quality of teaching; and the results of school and public examinations, such as WAEC/NECO SSCE, and the graduation results of higher education graduates.

Second, the data is inserted into the predictive, multivariate analysis whose product is an education that indicates the magnitude of influence of each of the input and process variables on the output variables. This resulting equation is like a spider's web showing the linkages and the magnitude of each link. The simple interpretation of a link which, for example, illustrates that funding contributes 35 per cent to the variation in the SSCE performance scores, is that if you increase the current level of funding by 35 per cent, performance in the SSCE will jump to 100 per cent. Keep in mind that it is a web of linkages and we must intervene at every point in the link to attain the desired quality improvement. In other words, the links may have 23 per cent for facilities, 14 per cent for teacher remuneration, 17 per cent for teaching style, 11 per cent for students' attitude to work, and 8 per cent for home opportunity to learn.

The third step is to intervene at the level of the magnitude of the links for all variables. If only a few links are targeted, the desired results will not be attained. This is where we falter in our intervention to stop the education boat from sinking. We believe that by improving the facilities in our schools, while holding teacher quality and welfare constant, quality will automatically scale up. We believe that if we increase teachers' salaries, improve facilities and hold students' attitude to work constant, we are home and dry. Of course, we are not. What we should do is to intervene incrementally on all the variables to assure the desired collective positive impact on quality. We must not focus on a set of variables and neglect the others. We should be aware that the strength of the education chain is as strong as

its weakest link and hence factor all the elements of the education equation into our deliberations in our quest for improvement.

The application of the systems formula to revitalising education is productive over a phased time period. It should progress seamlessly from one administration to another. While annual effect gains can be seen, its full effect is often perceived over a five- to ten-year period. This underscores the continuity of educational intervention based on the template of an improvement master plan. If a ten-year improvement template using the systems approach has been developed by a particular administration whose life expires in four or eight years, the next administration, regardless of political party, should see the implementation to its successful conclusion in ten years. But the opposite scenario typically plays out in Nigeria. A new administration throws overboard what the previous administration has done and engages in re-inventing the wheel. The education repair landscape turns out to be mere patchwork.

We offer the following five steps to take education to the 'Promised Land' in Nigeria:

1. Build schools that meet international standards.
2. Train a new breed of twenty-first-century teachers who are steeped in modern methods of instruction and are at the cutting edge of knowledge in their subject matter.
3. Provide a curriculum from basic through higher education that will lead students to develop twenty-first-century skills and acquire the values of good citizenship.
4. Improve funding to education and enforce transparency and accountability in the financing of education.
5. Set up a national network for a quality assurance system for basic education, with state inspectorates of education as nodes.

It is our hope that the faculties of Education in Nigerian universities will find a role in the march along these five steps and stand up to be counted when the roll of honour of contributors to the delivery of quality education in Nigeria is called.

On the Future of Education in Nigeria

What does the future hold for education in Nigeria? Surely, no one in any higher institution today or outside of it knows with absolute certainty. The game humans play is to conduct a forecast based on trends of past events. Mathematical models are available that will forecast scenarios based on such past trends. While no model has 100 per cent predictive accuracy, some present results that can form the basis

for sound judgement in planning for the future. If we were able to achieve 100 per cent accuracy of prediction, then humans would play God! This is why we report errors in predictive accuracy in such scenario-building.

Forecasting and scenario-building have found uses in weather forecasting. The Nigerian Meteorology Organisation (NIMET) predicts a comparison of rains from one year to another. Weather websites provide long-range weather predictions for cities, sometimes over two to four weeks. Scenario-building in education works on the same principle, based on crafting a regression model. The greater the number of variables in the equation as predictors, the greater the predictive power of the model and hence the accuracy of the scenario that is built.

It was a delight to note that a faculty conference on 'Education Beyond the 21st Century' took place at the University of Ibadan. This is a commendable path to trend. However, focusing beyond the twenty-first century would appear to be overly ambitious in the face of the dizzying pace of change of events in the world today. Most scenario-builders are satisfied with forecasting within the century, and not beyond. But of course, who says great universities in Nigeria should not do it differently. Personally, I have stuck to the twenty-first century, and even within this I have safely pitched my tent on a 2050 date.

Emerging Scenarios

I developed six scenarios—one for the five major input variables into the educational system: teachers, students, curriculum, funding and resources. The sixth scenario is an agglomeration of the five to represent the process dimension of the educational system. So, here we go.

Teachers

Owing to an anticipated 15.8 per cent annual expansion of the system, as induced by a 2.9 per cent population growth rate, the teacher number will be expected to increase by a factor of 12 per cent annually. Previous trends led to the scenario prediction that the system would respond with an actual 6 per cent increase by 2025, dropping to 2.3 per cent by 2050 on account of the impact of technology. Partitioning these observed growths, we anticipate that the higher education system will achieve a lower growth rate over the 2013–2050 period of about 3.2 per cent on average, compared with basic education with 5.4 per cent average growth.

On the quality front, the rate of growth will be 0.36 per cent up to 2025. While the overall quality of teachers is forecast to take a gradual rather than a sharp dip, quality in terms of the use of technology will rise in response to teachers becoming familiar with emerging technologies in the course of their everyday lives. Quality will also respond positively to innovative capacity-building initiatives that were forecast to be introduced by 2020. From that year, and based on the rhythm of the cycles of changes in the educational system, Nigeria will witness not just the transformation agenda of the format of the extant government but a radical transformation in the form of major policy and practice shifts.

Students

I forecast that student numbers at the basic education level will rise differentially by geopolitical zone but level off at 5.8 per cent nationally, with population growth and government policies being major drivers of the increase. Our model predicts that while the south-west, south-east and south-south geopolitical zones will witness 18 per cent growth at the basic education level and 13.3 per cent growth in higher education enrolment, the north-east and north-west will be at the other end of the pole with 3.2 per cent and 4.1 per cent respectively for the basic education system and 1.2 per cent and 1.9 per cent respectively for higher education.

While the attitude of students to schoolwork and reading culture will not improve significantly, the dexterity with which students use technology will increase greatly. This fluency in the use of technology will compensate in some form for the weak reading culture as students are able to bolster their learning using such technology under the guidance of the technology-savvy teacher.

Curriculum

The basic education curriculum will continue to be overloaded and will change rapidly since the Nigerian Educational Research and Development Council (NERDC) has switched to 'rapid-fire' mode. Nowhere in the world do you have such flux in curriculum change as we have had in Nigeria in recent times. It was expected that the anticipated surgical transformation of education would bring such haphazardness to a halt by 2020. Between then and 2050, we would witness the evolution of curricula at all levels in response to the contemporary needs of the society. This would be enhanced by a decrease in the time lag between when the curriculum is developed and when it is finally approved for use. Currently, it takes an average of two years to traverse this last leg of the curriculum development race.

Process Scenario

It now remains for us to put together all the input elements and forecast the Nigerian classroom of 2050 that my great-great-grandchildren will attend. We forecast that the classroom will be computer-technology dominated with virtual reality prevailing. The classroom will cease to be physical as everywhere will be the classroom for the learner. The handheld device will be the chalkboard for the teacher and notebook for the pupils. Those attending classes will be diverse, transcending geographical boundaries and other socioeconomic and cultural boundaries. Assessment methods will be completely transformed as the teacher will be able to see, literally, through the heads of individual students to determine how well and how much they are learning. The classroom will be 99 per cent paperless, with e-readers, tablets, smartphones and other communication gadgets dominating the scene. The model of learning and teaching will shame present-day psychologists. It will be a scene of amazing opportunities for teachers and students. It is for this future world that we should be preparing our teachers in the faculties of Education at Nigerian universities. In many universities in Asia, Europe and North America, twenty-first-century classrooms are already set up for the preparation of future teachers. The vice-chancellors of our universities should take steps to follow suit.

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