

**UNIVERSITIES, RESEARCH AND DEVELOPMENT IN NIGERIA:
TIME FOR A PARADIGMATIC SHIFT**

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INTRODUCTION

The current global advanced capitalist development, which took a number of centuries and series of scientific and technological revolutions to metamorphose, did not fall from the sky or even evolved on its own. On the contrary, it was consciously and intellectually nurtured and researched into principally by the western universities through their triple mandate of producing requisite high skilled manpower, knowledge and related services.

Research, which is a systematic search and investigation for increasing the sum of knowledge, or its extended version, research and development (R&D), the search and application of this knowledge for development of new and improved products, services and industrial processes of capital development which, have in recent times, emerged to occupy the main centre stage in the activities of the western universities. This is understandable because research and development has become the most enduring and effective means of boosting sustainable economic development and re-enforcing competitiveness in face of rapid growth taking place between industries, countries and peoples in the world.

There is ample evidence to show that research and development generated by higher education, more than anything else, has contributed to the rise and expansion of the world knowledge economy, and the establishment, once again, of imperial knowledge hegemony of a few countries over the rest of the world in the on-going process of globalization and its uneven development.

This particular point explains why the main criteria for ranking the “world class universities” is not so much the volume of teaching, student population or

community services a university could muster; but research output measured by the breakthrough findings published in first class and medal winning journals and books, which could increase to volume and rate of knowledge accumulation. This development has made knowledge accumulation to be the most important and dominant form of today's capitalist accumulation, responsible for launching the advanced countries to the top of the world, by their control of the most advanced social and human capital formation, economic development and improved living conditions.

It is little wonder; therefore, the United States of America, which invests the largest share of the world R&D capital, controls the largest number of world class universities and the equal lion share of the world knowledge economy (Zinberg O. 1986; Castells 1991; Altbach P. 1999, world Bank, 2002 and Bako 2005).

This paper explains the extent to which Nigeria with the largest number of universities and blessed with the biggest human and material resources potential in Africa has had its development impacted by the changing direction, quality and quantity of research emanating from its ever expanding national university system. To explore the interaction between R&D and Nigerian universities right from their earliest but glorious engagement to the current truncated state, this necessitates the call for a paradigmatic shift in the structure and functions of university education. The paper divides its argument into five sections follows: first part explores the conditions under which research became prominent in the first part of the life span of the Nigerian universities from 1960s up to the mid 80s, from when it found itself subsequently declining up to its comatose today. Second part outlines the major factors that have militated against the development of research as an academic activity geared towards knowledge generation, accumulation and dissemination for human and social development and transformation to be engineered by the Nigeria universities. Third section illustrates the current sorry state and trends of research prevalent in Nigerian universities. Fourth section discusses the impact of the collapse of research on the performance of the universities and on larger economy, polity and society of the country. The last part proposes how a paradigmatic shift in the system and function of universities by way of reforming and rebuilding their research sector could be undertaker for them to play an imperative and urgent responsibility of not only reversing and eradicating the current mass poverty, corruption, economic decline and bad governance which the country is notorious worldwide, but also assist in launching Nigeria and Africa to the forefront of the 21st century global development.

2. THE RISE OF RESEARCH IN NIGERIAN UNIVERSITIES

Even though the main number one function of the first and second Nigerian universities was not specifically research, yet it would be interestingly to see how it was accommodated and promoted to optimal level and international acclaim. The period 1960s between and 1980s was not only the golden age of university education, but also its research. In fact, it was unanimously agreed by the World Bank, the National Universities Commission, the Nigerian academic staff union and industries that employ graduates, that in terms of quality and quantity of research

output of tertiary institutions, Nigerian was the best and leading in Sub-Saharan Africa from 1960s to the late 80s (Karani, 1997; Okebukola, 2002).

One index for measuring the research output was by the number and quality of published works authored by Nigerian and co-authored academic in international journals and by the world distribution of active serial titles emanating from the universities, which contribute to the generation, dissemination and application of scientific knowledge for development in Nigeria and beyond (Cetto A.M. 1998). Excellence in research and publications have made individual universities to have earned global respect and recognition in specific disciplines such as the university of Ibadan was famous in medicine, education, religious studies and history; Ahmadu Bello was re-known in Engineering, Veterinary medicine, Agriculture, History, Arts and Radical social Sciences; Lagos was recognized in Business Administration, Law and Social studies; and Nsukka was famous in languages and literature. Evaluation by the NUC's ranking systematic of Nigeria universities according to the performance of their academic programmes through their accreditation exercises, have radically changed the above picture (NUC quality assurance in Nigerian universities vol. I, 2002).

Another way for measuring the quality of research out put is through academic standard attained by a comparative analysis of the quality of graduates evaluated by labour employers and peer universities. Because of the extensive research carried out by the teaching academic staff and the availability of teaching and research facilities, the Nigerian graduates of the early period were classified among the best in the world. The universities themselves, Nigerian government, employers, World Bank, National Universities Commission (NUC) and even the academic staff themselves, now nostalgically recall this as the former recently opined:

“By the Mid 1970s the post independence investments in education and university education in particular had created enormous potential for the country. The expansion of university education occurred with increased quality of instruction recalled in the institutions. Between 1960 and 1980, graduates of Nigerian tertiary were among the best in the in European and North American Universities and Nigerian academics proved their mettle that recalled national and international acclaim and recognition. These developments created the actual possibility that Nigeria would realize her destiny as the powerhouse of African liberation and the pride of the black man and woman all over the world (ASUU, 2002)”.

The last and I think the most important yardstick for measuring the quality and relevance of university education and its research component had been by its level of contribution to the general economic growth, development, prosperity and democratic empowerment of the citizenry. During the first phase of Nigerian universities, it was observed that the calculations of the rate of returns from investment in higher education were the highest in Nigeria compared to other African countries where the statistics were available. Nigerian universities yielded the highest rate of return of 46% against 15% the lowest between 1960 and 1980 as recorded in the table below;

**Table I: The Returns to investment in Higher education in some African countries
in percentage between 1960 and 1980.**

Country	Rate of return on higher education
Botswana	38.0%
Ethiopia	27.4%
Ghana	37.0%
Kenya	31.0%
Lesotho	36.0%
Liberia	17.0%
Nigeria	46.0%
Rhodesia	34.0%
Sierra Leone	33.2%
Somalia	15.0%

Source: Adapted from Hinchciffe K. (1987) Higher in Educations in Sub-Saharan Africa. Croow. Helm Ltd. London. P. 50.

Consequent upon the high rate of return generated by higher education, Nigeria was able to sustain a very high economic growth rate, development and relative prosperity within the country. In fact, the growth rate of the Gross Domestic product in 1962-63 exceeded the four percent, which the National Development Plan envisaged by shooting up to 5.7% (National Development Plan Federal Ministry of Economic Development Progress Report 1964, pp 2 & 5).

This robust state of higher education and research could be attributed to a number of favourable conditions that made it possible.

First is the colonial inheritance factor, which could be studied under the institutional, infrastructural, personnel and tradition of research, handed over to pioneer colonial universities. Though the British colonialism resisted the demand to establish universities in spite of the national and long years of agitation and demand for them, yet it established a great deal of research institutions right from the 1920s in order to promote its economic, political and social interests and policies in Nigeria. For instance, in order to encourage and guaranteed to production and supply of export drops such as cocoa, palm produce, groundnuts, and cotton the British established agricultural research centres at moor plantation, Ibadan, Umudike, Umuahia Samaru and Zaria, where applied scientific research actually made its debut in the country. Towards the mid 1940s, the British in its efforts to study and control the effects of implanting capitalism on the local populace, started in earnest the development of colonial social science and the setting up of the West African institute of social and Economic Research that operated in close ties with the university college of Ibadan, until its ceased to exist and converted to Nigerian Institute of Social and Economic Research (NISER) in 1959. Its main functions were to coordinate research on a regional basis, the organisation of regional comparative studies, the organisation of studies of practical interests to governments and business firms, experimentation in

the adaptation of research techniques to local conditions and the supply to the university college data which could be used in teaching (Mair, 1965).

In fact, the British developed equipped and staffed post secondary institutions such as the medical colleges in 1930, the Yaba College in 1932, the university college of Ibadan in 1947 and the regional colleges of science, Technology and Arts in Ife, Lagos, Zaria and Nsukka in 1952. These post-secondary schools, emerged with the earlier research institutes became the embryos and foundation institutions of the five first generation Nigerian universities established in 1962 (Fafunwa, 1971).

In fact, virtually all the infrastructural facilities for the development of university education and research were also inherited from these colonial institutions. For instance, when the university college started, it had no college, no staff, no library no laboratory, no students but were all were transferred from Yaba Higher College to the college of science, technology and arts in Ibadan. In the same vein, the regional colleges of science, Technology and Arts at Ife, Nsukka, Lagos and Zaria became the nucleus of the universities that sprang in the regions.

The universities also inherited a well-trained research cadre of staff, mostly British and Americans who had conducted numerous researches in Nigeria and outside. For example, from 1962 to 1967, the academic staff of Ahmad Bello University consisted of 35 Nigerians and 162 expatriates, university of Nigeria 247 Nigerians and 111 expatriates; university of Ibadan 164 Nigerians and 182 expatriates university of Ife 101 Nigerians and 91 expatriates and university of Lagos 162 Nigerians and 52 expatriates. Out of the total 1,324 academic staff in Nigerian universities, 724 were Nigerians and 595 expatriates (Fafunwa, 1971:201).

And the rate at which the Nigerianisation of the academic staff was pushing, it was estimated by 1980; about 85% of the academic staff particularly in the universities of Ibadan, Lagos, Ife and Nsukka were to be Nigerians (Fafunwa, 1971:279).

There was also a strong tradition of research which the expatriate staff brought to bear to the Nigerian universities from the colonial period and western established universities. It would seem that British colonialism had funded more qualitative research and output for development through the colonial office, colonial social science council, Business firms, Royal Foundations, and societies and agencies such as Carnegie, whose publications could be seen in the Journal of the African society, Journal of the Royal African Society, Journal of the Royal Anthropological institute, international Review of missions and Royal institute of international Affairs (Hetherington, 1978). The entire research that was produced in the postcolonial period by the first and second Generations universities between 1962 and 1985 could be higher than the ones produced by the 84 Nigerian universities between the late 1980s and 2005.

The second very important factor that facilitated the development of higher education and research was the overall hand some funding which education generally and universities in particular received from the early post colonial governments of Nigeria. For example, between 1950s and 1960s the regional governments devoted from 25% to 30% of their annual budgets to educating (Yesufu, 1985). Furthermore, out of the total 7.2 million which the Federal

Government of Nigeria committed to education between 1962 and 1964, 1.4 million was spent on general education, 5.3 on higher education, to .3 on technical education, to .29 on antiquities and .93 on national archives (National Development Plan, Progress Report, Federal Ministry of Economic Development, Lagos P.98). This favourite allocation to education and universities continued up to 1980 estimated at an average of 15% of National budgets out of which between ten to 7 percent was assigned for research.

The third factor was the university-institutional framework created for research in terms of allocation of resources, functions and time for academic staff. As indicated between ten to 7 percent of the budget of the first and second generation universities was specifically allocated to research. There was a clear definition of distribution and operation of university functions as stated in their mission statements, on which research was very prominent. In terms of distribution of function, out of 100 percent, it was estimated on the average in these universities 50% was for teaching; 30 percent research 10 service to the university community and 10 percent service to the community as in the university of Nigeria Nsukka and other universities (Fafunwa, 1971: 269).

Finally, at the National level, the early universities enjoyed some relative institutional autonomy and academic freedom from the democratic regimes of the first and second Republic and (1960-1966 and 1979-1983) neo liberalized military regimes of Gowon-Obanjo-Murtala 1966-1979 to enable them and conduct research and Pursue knowledge without hindrance from the states and governmental bureaucracies. There was a conducive atmosphere and environment created for the flourishing of universities in research in the country.

3. The Collapse of Research in Nigerian Universities

It was generally agreed that systematic decline and collapse of research was started with that of higher education and universities particularly from the late 1980s up to date. Thus, the National Supervising agency of the Nigerian universities the NUC, since the early 1980s noted that:

“in terms of quality and quantity, the research out-put of tertiary institutions in Nigeria was about the best in sub-Sahara Africa up to the late 1980s (Karani, 1987). The wherewithal for research surely as good research training and motivation, availability of equipment, and good library facilities pre-dominated, with the onset and acceleration of the decay in the system, these ingredients faded away. By 1996, the quantity and quality of research had decline to an all-time low (Oke bukola, 2002: 49).

Summarizing the factors that contributed to this decline from the late 1988 to 1996, and subsequent collapse from 1997 to date, the Nigerian Universities Commission listed the following:

1. Lack of research skills in the modern methods.
2. Constraint of equipment for carrying out state-of-the out research.
3. Over-loaded teaching and administrations schedules which thee little time for research.
4. Difficulty in accessing research funds.
5. Diminishing scope of mentoring junior researchers by seasoned and senior researchers due to brain drain (Okebukola, 2002; 4).

For a closer scrutiny of those factors, I would like to address three most central ones namely those of total paradigmatic leaning to teaching rather than to researched; (2) Systematic under funding; and (3) disconnected research from the economy, state and community.

The British Colonialism first planted the paradigmatic leaning concept and activity in the Nigerian Universities, This learning as we had seen above was not total. It was also for a specific demand of a situation actually for which universities were established, namely for the production of high-skilled manpower that could facilitate the transition from colonialism to neocolonialism and the Nigerianisation of the post-colonial state, economic and Intelligentsia. It was because of this reason, there was a close relationship and or correlation between the Ashy Report, which gave birth to the first set off Nigeria universities and Habison Report, which produced the high-level power needs for Nigeria. The number of universities, courses and programmes as well as volume of enrolment were to be strictly determined by the Harbison Report, which estimated the from 1960 to 1970, Nigerian universities would need to produce at the rate of 2000 personnel a year in order to cope with the rate of Nigerianisation.

Fafunwa, 1971, 159). In spite of the above Harbison report did not underrate the importance of research, as it stated:

“It should be the duty of Nigerian universities to promote work and research in the field of African studies , and recommended that every university in the country should have an institute of African studies, such an institute could coordinate research which was being conducted by various university departments” (Quoted in Fafunwa, 1971; 168)

The Research paradigm went to through two phases according to the development of higher education and universities in Nigeria. In the first phase, research was recognized and conducted, but was subordinated and intended to improve the productivity of labour and its specialization, and to a lessen extent contributed to solving the societal problems as highlighted above. In the second phase, It is when the quantity and quality of university based research has since the late 1980s begun to decline gradually to the current level of collapse and virtual disappearance.

The kind of thinking that informed the current paradigm is that research, is a luxury, at best, or a waste of funds, at worst, for which teaching and production of manpower and after university academic activities could take place and expand without research. It is also the same thinking that the informed the institutional definition and distributing of university functions, resources, funding, recruitment of staff, training and sharing of duties and schedules is which research is now completely left out.

At the moment, over 99.5%, if not all 100%, of the Nigerian university activity and time are devoted to teaching and assessing of students throughout the year, without definite official time designated for doing research. Those that must do research could only do so by “stealing” time out of teaching, or their spare time, or leave, if they manage to secure it. It is surprising that even research staff running to over five thousands in Government research institutes, which now number over 40 on almost every imaginable discipline and issue, spend most of their time not

doing research but administration” and acting as civil servants often reading newspapers and jockeying for positions within their establishments. The whole concept of research is an academic activity for generating knowledge for economic development has not yet dawned on the Nigerian ruling class, policy makers, university administrators and staff.

This lucrative field of knowledge capital accumulation and economic development, is almost entirely left to the metropolitan bourgeoisies, their universities and research centres, which they exercise global control over its production, dissemination and utilization of research and development both at the centres and at the Nigerian periphery (Bako, 2005)

It is important to recognize that the decline of university education generally and research particularly has been reflecting the degree of chronic under funding which they have been subjected to in the past one and a half decades. It is ironic to note while the number of universities and students’ enrollment have been expanding from six universities in 1962 enrolling 3545 students to 37 enrolling 350,000 in 1998 and in 2005 to 84 universities (54 public universities 26 Federal and state 28 and private 30) with about 800,000 total student population, the percentage of the National budget allocated to education and universities has been steadily declining from an average of 30% in the 1960s, 15% in the 70s and 80s, to 6% in the 1990s, and to less than 3% in the 2000s (Ukeje 2002; Obikoya 2002; President Report to the 12th NDC of ASUU, 30th September, 2002 in the National Scholar, ASUU Publication).

Thus while the state officials in administration education sector are quick to show how the volume of devalued billions of naira has been rising from 215 million in 1980 to 1.8 billion in 1995 and from 34 billion in 2001 to over 50 billion in 2004; they don’t tell us the deficit and shortfalls of the Nigerian universities suffer in finance, teaching and learning equipment and facilities, and in fact by the mode of funds allocation utilized for the various sectors in the universities.

For the last one and a half decades, Nigerian universities have been expanding over 98% of their recurrent expenditure on paying salaries and allowances and 2% on maintaining services, with zero allocation for research. While about 40 percent of the capital grants are being misappropriated by the state officials at the Ministry Education National Assembly and Heads of educational parastatals and the universities, the remaining 60% is still looted through inflated contacts, commissions, and kickbacks shared between state officials and contractors, and on non-academic related expenditure, as noted by I.A Adalemo.;

“... though the Federal Government commits massive resource funds to education, unfortunately, the pattern or type of development chosen is very wasteful and has contributed partly to the decline experienced in recent times by the higher education system. A large proportion of the funds allocated were spent on the development of brand new campuses built from the scratch. Apart from the cost of opening up those isolated locations and the cost of building, large sums were spent on the provision of municipal facilities and services. The pattern of development amounted to the building of brand new towns with the larger proportion of funds, committed to

physical development and relatively smaller proportion to academic expenses (Adalemo, 2001:23)”

As confessed by the NUC in a recent equipment audit it conducted on all Federal universities, it reveals that teaching and research equipment are in the advanced state of decay or are in severe insufficiency. Over 70 percent of the laboratory equipment and library books in today’s Nigerian universities, for example, were bought and placed between 1960s and 1980 (Nigerian university systems Chronieler Nov. 12 2002, December 2004, P.18). This point is further validated by another survey conducted by the NUC, in which it discovers that only about 30 percent of the university student population could have adequate access to class rooms, lecture theatres, laboratories workshops and libraries (Okebukola 2002 ;19).

Hence the official figures of the research grants allocations made to the university according to the NUC between 1989 and 2003 could be described in the absence of a better terminology but just as official distortions contained in Table 2 below.

Table 2: Research Grant Allocation and Releases from 1987- 2003.

S/No.	Year of Release	Allocation	Amount Released (Naira)
1.	1989	12,776,000.00	12,776,000.00
2.	1988	20,000,000.00	17,237,875.00
3.	1989	20,000,000.00	20,000,000.00
4.	1990	24,000,000.00	22,075,371.00
5.	1991	51,266,530.00	16,645,034.00
6.	1992	14,500,090.00	17,472,972.00
7.	1993	122,182,102.00	122,182,102.00
8.	1994	132,213,817.00	98,662,255.00
9.	1995	155,534,575.00	73,973,806.00
10.	1996	153,842,000.00	50,583,686.00
11.	1997	194,013,732.00	122,020,447.00
12.	1998	215,618,453.00	149,993,549.60
13.	1999	302,735,543.00	183,501,468.00
14.	2000	448,127,780.00	612,666,910.00
15.	2001	206,410,910.00	206,410,619.00
16.	2002		
17.	2003	73,435,618.00	73,435,618.72
	Total	2,146,657,150.00	1,799,637,713.32

Source: Okebukola P. 2004: “Strategies for stimulating Research and development in Nigerian Universities.” In Nigerian University System Chronicle, Vol. 12; No. 2 pp17-18

Going through the documents from which the above statistics were compiled, distinctions could be made exactly between research grants allocation

and the actual releases, as well as between the actual releases and direct research utilization by the universities. From the research Bulletins produced by the National University Commission, for example, out of the total fund budgeted for research between 1999 to 2000, less than twenty percent were actually allocated to the NUC by Government, while out of those fund, less than 50% were actually allocated to the universities, and out of this allocation less than 3% of the money utilized for research. Because of the shortfalls the universities have been experiencing in the payment of salaries and maintenance services, the bulk of the research grants were vied for these purposes. This is why most of the Nigerian universities find it difficult to account for the research money received. (Research Bulletin, NUC, January, 1997-2000 to Federal universities).

From a survey conducted, less than 10% of the academic staff in the Nigerian universities received research grants in the past one and half decades. Thus, even if the total actual research grants were to be utilized by the universities for research purposes only, only ₦50, 000.00 could have each staff received per year between 1994-1996 at University of Ibadan and ₦33, 291 for Lagos university, ₦66, 179 for university of Nigeria and ₦65,000.00 or Ahmad Bello University. If you translate each allocation of each staff into US Dollar, it would add up to less \$500.00 (NUC, Research Bulletin, 1997-2000 chapter 2).

From the foregoing, it is clear that the bulk of university based research has been self funded by the graduate students, staff-in-training and academic staff, in fact, over 80 percent has been from salaries and parents. Less than ten percent of the university based research is funded externally by foreign bodies, and the same percentage by the university research Boards.(Research Financing Surveys in Ahmadu Bello University, and University of Ibadan ongoing research by the author)

Another major constraint of Nigerian university research is that it has been increasingly delinked from the productive sectors of the economy, but surprisingly even from the community and polity problems and issues. Research has been trapped in and limited by the immediate idiosyncrasies of supervisors and graduates.

In a study on why there has been a very low demand for and the use of Nigerian university R&D, the finding shows more than 90% of the respondents thought poor funding for S&T prejudiced the production sector against the use of university results, poor or indifferent attitudes of the productive sector of research result (64%), poor communication links between the two sectors 64%. The lack of clear cut enabling policies was also considered an important factor (49%), other factors were listed below according to the order of their importance in the table 3 below

Constraints	Yes	%	No	%
Poor funding of research	118	91.5	11	8.5
Lack of clear-cut enabling policies	63	48.8	66	51.2
Poor or indifferent attitude of Industrialist to results of university	83	64.3	46	35.7
Poor or indifferent attitude of university scientist	16	12.5	113	87.6
Bureaucracy	41	31.8	88	68.2
Poor communication between universities and the productive sector	83	64.3	46	35.7
Paucity of University-based research results	7	5.4	122	94.6
Inadequate research personnel	22	17.1	107	82.9
Economic reasons (e.g SAP)	47	36.4	82	63.6
Political reasons	29	22.5	100	77.5
Security reasons	6	4.7	123	95.3
Other	7	5.4	122	94.6

Source: Chapter 17, University Based Applied Research and Innovation in Nigeria. <http://research.yahoo.com/appliedresearch+NigerianUniversities&Presearch>

4. Research Trends in Nigeria Universities

The picture of the research trend in Nigerian universities can be glimpsed from the previous deliberations. The bulk of this research is neither related to nor determined by the demand and priorities of the Nigerian economy, society and polity. This is because it is almost entirely delinked from them in terms of suppositions, methodology, findings and policy applications. It has little added intellectual value for the society, and virtually adds nothing to it in terms of solving its problems or advancing its progression.

There has been very little or no collaboration between the university researchers, operating strictly from their disciplinary narrow confines and mould. This lack of collaboration exists within and among the universities as well within faculties of the same Universities. No attempt is made whatsoever to disseminate its findings or translate it into patents for industrial application and expansion of production. The first attempt was by NUC to organize Nigeria universities Research and Development Fair, 22nd-26th November, 2004, whose objectives were:

- To exhibit innovative research projects and out-puts from Nigerian Universities.
- To highlight innovation and creative efforts of R&D in Nigerian universities

- To provide opportunities for networking and collaboration among institutions between and industry as well as with institutions abroad.
- To provide a focus for industry to select research output for further development for mass production and commercialization
- To provide avenues for attracting support for ongoing development oriented researches from the organized private sector and international development agencies (Nigerian University System Chronicle Vol-12, no. 1 p. 16).

According to the communiqué of the Fair, 43 universities and a total of 592 research projects were exhibited. However, most of the objectives of the Fair were still repeated in the recommendations for implementation, which shows were not achieved (Nigerian university system chronicle Vol. 12 No.2 December 2004, P.4)

At the end of the Fair the result of the competition for best research projects, which was attended by the universities and research centres were declared, as follows:

a. Overall prizes

- 1st university of Agriculture Abeokuta
- 2nd Obafemi Awolowo, Ile Ife
- 3rd Federal Technology, Owerri

b. Federal University Prizes

- 1st University of Agriculture, Abeokuta
- 2nd Obafemi Awolowo University, Ile-Ife
- 3rd Federal University of Technology Owerri

c. State University Prizes

- 1st Olabasi Onabanjo University, Ago Iwoye
- 2nd Ladoke Akintola University of Technology, Ogbomosho
- 3rd Cross Rivers University of Technology

c. Private University prizes

- 1st Bowen university, Ogun State
- 2nd Benson Idahosa University, Benin City
- 3rd Madonna University, Okjja

e. Inter-University prizes

- 1st National Mathematical Centre, Abuja
- 2nd Nigerian French Languages Village Badagary, Lagos
- 3rd Nigerian Institute of Nigerian Languages.

The above ranking did not exactly confirm an earlier one which the NUC conducted on the 65 universities on the quality of scholarly research output measured according to scholarly articles published in high class international journals which made significant contribution to global and National development and published in journals with editorial offices in North Africa Europe Australia and Asia. In addition their contents were abstracted in scholarly indexes, and physically sighted by the NUC teams became eligible for scoring. The top 20 Nigerian universities according to research output, positions and scores were given as follows:

Position	University	Score
1 st	Obafemi Awolowo University, Ile Ife	(200)
2 nd	Federal university of Technology, Akure	(186)
3 rd	University of Ibadan	(154)
4 th	University of Lagos	(144)
5 th	University of Agriculture Abeokuta	(74)
6 th	University of Ilorin Ilorin	(62)
7 th	University of Benin, Benin City	(50)
8 th	Nnamdi Azikiwe University	(44)
9 th	Rivers State University of Sciences and Technology, P/Harcourt	(32)
10 th	University of Calabar, Calabar	(30)
11 th	Federal University of Technology Owerri	(22)
12 th	Ladoke Akintola University of Technology Ogborosho	(22)
13 th	Abubakar Tafawa Balewa Uniniversity, Bauchi	(18)
14 th	University of Ado-Ekiti, Ado Ekiti	(18)

15 th	University of Uyo, Uyo	(14)
16 th	University of Agriculture, Markudi	(12)
17 th	Delta State University, Abraka	(12)
18 th	Nasarawa University, Keffi	(12)
19 th	Abia State University, Uturu	(12)
20 th	University of Maiduguri	(10)

Source: Thisday Newspaper of March 1st, 2005 and the website of NUC

According to the same report the Faculties that excelled in research in the top three universities were as follows:

Position	University	Faculty	Score
1 st	Obafemi Owolowo	Science	68
2 nd	Obafemi Owolowo	Agriculture	38
3 rd	Obafemi Owolowo	Engineering Design and management	36
3 rd	Obafemi Owolowo	Pharmacy,	36
4 th	Obafemi Owolowo	Technology	18
5 th	Obafemi Owolowo	Social Sciences,	4
6 th	Obafemi Owolowo	Law	2
1 st	Federal University of Technology Akure,	Agricultural Tech.	104
2 nd	Federal University of Technology Akure	Sciences	74
3 rd	Federal University of Technology Akure	Environmental Tech	4
4 th	Federal University of Technology Akure	Engr.& Engr. Tech.	2
5 th	Federal University of Technology Akure	Mines and Earth Science	2
1 st	University of Ibadan,	Agriculture and Forestry	42
2 nd	University of Ibadan	Public Health	34
3 rd	University of Ibadan	Science	26
4 th	University of Ibadan	Pharmacy	4
5 th	University of Ibadan	Clinical Sciences	12
6 th	University of Ibadan	Medical Science	10
7 th	University of Ibadan	Education	8
8 th	University of Ibadan	Dentistry	4
9 th	University of Ibadan	Vet. Med.	4

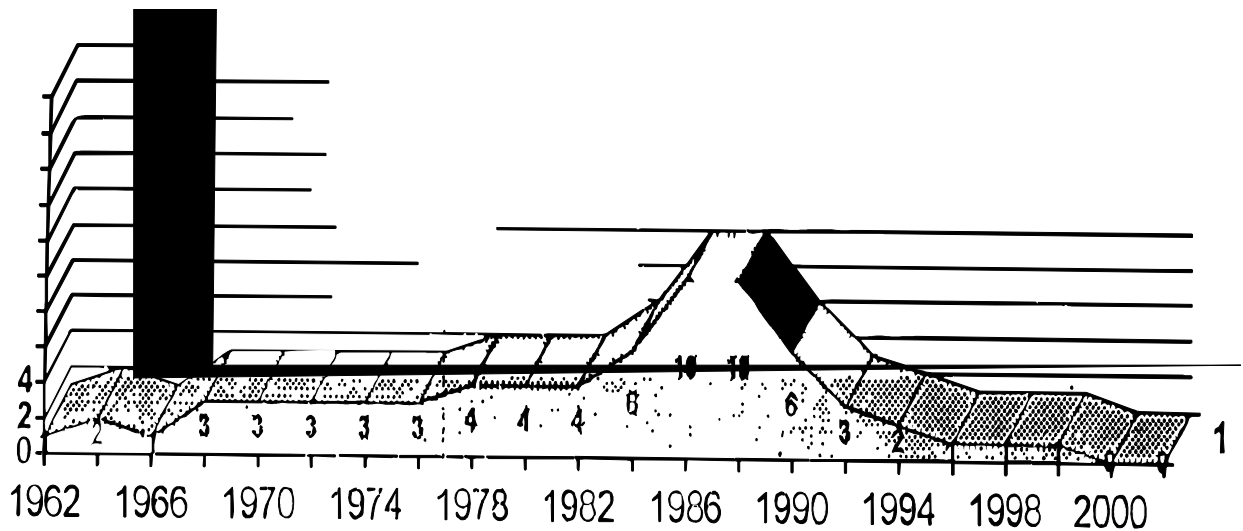
Source: (This Day Newspaper of Mach 1, 2005 and the Website of NUC).

These NUC rankings of university research output mask two very important points. First, the international ranking of the Nigerian Universities research in individual disciplines and their declining trend over the period. Secondly, the massive decline of active and regular national Journals within the Universities.

Both facts above were revealed in a study incidentally conducted by the current Executive Secretary, Peter Okebukola in 1998 in respect to published works in three international science education journals, namely the journal of Research in

Science teaching published by John Wiley and Sons and rated as the No.1 science Education Journal in the world, science education also published by John Wiley and research by Corfax (UK). All the issues of the Journals from 1962 to 2001 were surveyed and its frequency of authorship/co-authorship off published articles by researchers in Nigerian Universities was recorded. The result could be seen in fig 4 below.

Fig. 3: Research Publications authored/co-authored by Nigerians in three international science education journals (1962-2001).

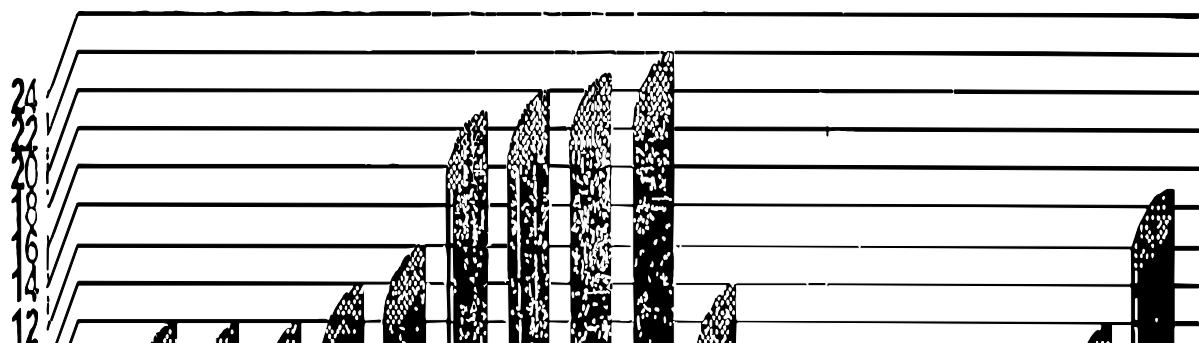


Source: Okebukola P. 2002 The State of University Education in Nigerian, NUC Abuja Nigeria. pg. 50.

At the second level, active journals in science education within the Universities were studied. From 22 active journals examined from 1962 to 1988, less than one quarter survived. This low research output probably reflects to low priority accorded to research and development by government. Nigeria's federal University system which could spend only 1.3% of its budget on research (Harnett, 2000).

Hence several universities that fielded their maiden editions, with vol. 1 No. 1 could not move to No. 2 or volume 2 thereafter. The figure 4 shows the rise and decline of active journals of education between 1970 and 2001 below.

Fig. 4: Number of active journals in Education (1970-2001)



Source: Okebukola P. 2002: The State of University Education in Nigerian, NUC Abuja .pp 51.

Other noteworthy trends in Research in Nigerian Universities during this period are as follows:-

- (a) Shift from collaborative to individual research;
- (b) Use of out-dated methodology;
- (c) Conduct of shorten-term rather than long term research; and
- (d) Reduction in available research grants (Okebukola, 2002).

Finally, it should be noted that generally the contribution of researchers from Nigerian Universities to global publication and production of knowledge has declined very tremendously. As noted by a study:

“Nigeria’s number of scientific publications from 1995 was 711-significantly less than its output of 1,062 scientific publications Nigerian Universities publication on science education between 1962 and 2000” (Okebukola 2001).

The trend of research in Nigerian University education is certainly going to have some devastating negative impact both on the performance of Universities themselves and on national development process in the country.

5. The Impact of collapse of research on Universities and development processes.

The overall negative impact of the collapse of R&D on Nigerian universities has been bearing itself even in their selected engagements namely, those of teaching, supervision and production of graduates, professional competence of professors, and their international ranking.

The first evidence of the decline can be seen in the products, namely the mass undergraduates that are being produced by these Universities. According to the World Bank related study of the labour market for University graduates found in the late 2000

“that University graduates are poorly trained and unproductively on the job and short comings are particularly severe in oral and written communications, and in applied technical skills are mostly half-baked” (Comments , World Bank of NUSIP Projects Implementation Manual, December 17, 2001 p.3.)

what have been said about the decline of research also affects the quality and relevance of teaching and supervision of postgraduates. For example, in a letter signed by Prof. I.I Uvah, Director, Academic Planning and research of National Universities Commission, ref NUC/Apr/139, dated June 25, 22004 to Professor Musa Abdullahi, Chairman, Committee of Vice-Chancellors of Nigerian Universities on the subject of Supervision of Doctoral Theses in Nigerian Universities: Need for a critical Reappraisal, its noted as follows:

“The National Universities Commission has established that the quality of supervision of postgraduate dissertation particularly at the doctoral level needs to be critically reappraised by the schools of the postgraduate schools in all universities.

Revelations from the recently concluded 2nd edition of the commission’s postgraduate development project, the Nigerian Universities Doctoral Theses Award Scheme (NUDTAS) indicate that the Theses entries can generally be described as “poorly supervised”. Weaknesses identified in the theses by all professor assessors of the theses range from poor focus, improper documentation, replication of earlier works, inadequate knowledge of appropriate theoretical design requirements to lack of contribution to knowledge.

The purpose of this letter is to:

- 1) *Bring to your attention the fact that serious lapses exist in the supervision of doctoral theses across the university system;*
- 2) *Point out that the image of Nations’ universities is threatened by poorly supervised doctoral theses of the Nigerian Universities.”*

This decline of quality arising from collapse of research affects also the quality of lecturers and professors. For example, recent surveys including the one conducted by the NUC indicate that over eighty percent of the publication that went for promotion to professors, readers and senior lecturers between 1989 till date could only find themselves in such sub standard, locally concocted and junky journals. This is because most of the articles sent to overseas for publication were turned down because of their poor quality and outdated information (Olukoja, 2004:363-309)

a. The decline in the quality of graduates and academic staff has contributed to placing of Nigerian universities at the bottom even here in Africa. This is when some African universities in countries such as South Africa and Kenya are battling for recognition even among the world class universities.

i. Second and most serious consequence of the decline of research is on the development processes of the country. It can be seen how it has now created a large quantity of irrelevant and low quality manpower not required for production and the development process. Thus because of

outdated curriculum, methods and instruments of teaching coupled with its declining quality, there is now a big mismatch between the volume and type of man-power produced and the changing needs of the economy resulting in the following distortion:

- (a) The growing size of unemployed and unemployable graduates, which is estimated to reach over one million now in the country, is a direct product of the above distortion.
- (b) The increasing growing demand for skilled, technological and scientific manpower, which the Universities cannot meet. This has been noticeable since the early 1980s (Yesufu, 1986).
- (c) The increasing rejection by International intellectual community of the degrees produced by the Nigerian Universities. Both students and newly employed graduates abroad have to undergo special training which they should have acquired in their graduating Universities.
- (d) Employers of Nigerian graduates spend a lot of money retraining them

The other level of concern is that there seems to be a correlation between the growing underdevelopment, gross poverty, corruption and inefficiencies in the products and services produced by the Nigerian economy, society and polity on the one hand, and the expansion of the kind of higher education produced by the Universities in Nigeria. (*Ajakaiye, O, 2000*)

Finally, it is generally accepted that more than just being an asset to economic development, social progress, prosperity and good governance; both the Universities and the manpower produced act as liabilities (Olaafe, 2005), which must be checked and addressed by shifting the existing higher education paradigm, volume and pattern of funding and forging closer interactions between Universities, Society and Economy in the Investment and development of the Nigerian R&D to the level it could move the country and Africa forward.

6. Towards A Paradigmatic Shift

Having discussed how and when the current paradigm of Nigerian university education has emerged to impeded serious research for national development because of its too much pre-occupation with teaching and production of man power, it is now appropriate to recount even briefly some of the main remedial measures employed by the Government, Nigerian Universities commission (NUC), world Bank International funding agencies and even the Universities themselves to revive the university research sector since its collapse. It is in this light, one can propose a whololistic radical paradigmatic shift for the

Nigerian Universities as a viable alternative for launching the country in the forefront of 21st century global development

The central focus, here is therefore, to propose a radical shift in the paradigm employed in the formation, organization, direction and definition of functions of the Nigerian Universities. It has tended to concentrate on manpower production almost at the total neglect or even abandonment of advancing appropriate research and knowledge, with some disastrous consequences for the development of the Universities, national economy, polity and society.

Historically, the introduction of more teaching and less research paradigm, was done by the British colonial administration in Nigeria, as it could be seen in the colonial commissions and programmes on the development of higher education (Aiquith and Elliot 1943, Harbisson and Asby 1959) which directed the form and principles that guided the development of the first generation universities, which the subsequent generations adopted and implemented in such a debilitating manner as to completely down grade and in some cases, even shut down research. The special circumstances of the situation made the colonialists to lay emphasizes over the other at the initial time, limiting the central vision and mission of the pioneer Nigerian Universities to production of high quality manpower that could facilitate the transition from colonialism to neo-colonialism, and the Nigerianisation of the State, economy and intelligentsia particularly in the post-independence era.

To be fair to the authors of the colonial higher education they even at the initial level criticized, though feebly, the wisdom, why should Nigerian Universities and higher education be crafted on only teaching and production of manpower at the exclusion of other universal functions of the Universities such as research and transmission of knowledge for development. Thus, it was noted in connection with the colonial objectives of development of higher education in Nigeria how:

“Both the Asby and Herbison Commission agreed it would be a short sighted policy to allow the educational system of a country to be controlled solely by consumer needs for manpower. However, it is part of the duty of an educational system to meet those needs, and in a growing country they must be given prominence (quoted in by Fafunwa 1971:159)”.

Furthermore, Asby (1960) in a comparative analysis of Nigerian and Euro-American Universities noted with some dismay while the former were built for continuity, conservation, expansion and transmission of knowledge for societal progression; the Nigerian Universities, on the other hand, in spite of what could have been written as their mission statements, they were essentially crafted for the two purposes: (1) First to produce manpower as that could serve as instruments of political changes, particularly in the transition from colonialism and neo-colonialism as well as the Nigerianisation of the neo-colonial structures and (2) for the Universities to serve as conduit for social changes especially in the formation of a modernizing elite for the society (SOW, 1999)

It is surprising to note there are a number of leading Nigerian educationalists who were ready to excuse the British colonialism, for building this one-sided paradigm in the Nigerian University and, attacked, at the same time, the subsequent

national government for not changing it. For instance, Professor Tijani M.U Yusuf re-stressing a point he made in 1970,

“Adapt at finding scapegoat, many of the indigenous critics of Nigeria’s educational system direct their venom at what they call its ‘colonial inheritance’, I have no sympathy for these critics. In Nigeria’s colonial era, the system of education was in reality geared to meeting the skill needs of that era; namely the clerks, teachers, book-keepers and preachers that were required by the colonial administration, the commercial houses and the missionaries. Many will recall the most obvious application of this policy—that the number of those who graduated from the old Higher College, Yabba, was closely related to vacancies in the public service? The main problem with Nigeria’s education in this respect, therefore, is not that the country inherited a bad system, but succeeding Governments have not displayed that degree of foresight, tenacity and capacity, to adapt the system to a changing economic, social and political environment” (Yusuf, 1985:7)

T.M was addressing some of the gross distortions in the structure of, and an imbalance in the out-turn from the educational terms of literary vs scientific and technical manpower from the educational system, which he could not see as originating from the colonial paradigm (Fafunwa 1971, 154).

In fact, even many of two remedies employed subsequently simply scratched it on the surface or just treated the effects than the causes of the problems.

From the mid 80s, the first remedy introduced by the Nigerian Government was to diversify and specialize the universities with a view to increasing their scientific, technological and agricultural contribution to the transformation of the country. The third generation universities, namely Abeokuta, Akure, Bauchi, Makurdi, Minna, Owerri, Yola and Umudike were either technological or Agricultural. Infact, the conventional Universities, the first and the second generations, were directed to change their admission policy in favour of science as 60 to science 40/Arts. However, a study of the academic diversification shows that it could not make differences in terms of improving the quality of academic programme, or even increase the research capacity and output of these universities. In fact, it was during the 1990s and 2005 a further deterioration was noted, contrary to the expectations, the technology universities failed to bring additional “practical” and professionally unique training programmes in the ways and means that could confer the ability to formulate technological problems, develop designs and fabricate end-products and prototypes. Just like the conventional universities, specialization universities titled more to management and business programmes, and were not equipped with the necessary and basic research staff and equipment such foundries machine shops, computers and studios, as well as infrastructure required to fulfill their mandate and produce positive impact (Adedipe, 2001).

Secondly, the government later attempted to examine and solve the problem from, funding perspectives. Following the proposed of the Longe commission for a 2% Higher Education Tax on company profits, specifically meant for research in the universities, the government created Education Trust Fund (ETF) that annually raises billions of Naira but which is to implementation and expenditure, have been diverted to supplement the regular allocations to education as follows: Primary

school 25%, secondary school 25%, Tertiary 50% (disbursed in the ratio 1.2 for Polytechnics, colleges of education and universities respectively. The supplementation of funding should be used by the universities in the following areas:

- i) Students work centres
- ii) Staff development and conference attendance
- iii) Higher education library system
- iv) Research
- v) Procurement and maintenance of equipment
- vi) Higher education book development

ETF was not only diluted to kill research but also it has suffered to same fate of the misappropriation, looting and the corrupt regimes of inflated contracts expended on non-teaching and non-research funding.

For the first time after some pressure, the government in its June 2001 agreement with ASUU accepted that there should be some defined guidelines for allocating and disbursing funds within universities. However, this arrangement was limited to recurrent, but not capital expenditure which carries over seventy percent of the total funding. The recurrent sectoral allocation should be as follows:

- | | | |
|----------------------|---|------|
| 1) Library | - | 10% |
| 2) Research grant | - | 5% |
| 3) Health services | - | 5% |
| 4) Staff development | - | 2.5% |
| 5) Publication | - | 2% |
| 6) Maintenance | - | 10% |
| 7) Other charges | - | 5.5% |

See Agreement between the Federal Government of Nigeria and the Academic Staff Union of Universities, 30th June 2001 P. 16

The NUC, on its part, has been busy attending to the effects rather than the causes of the declining academic programmes, arising from the disappearance of research. Thus, since 1989, NUC has been trying to “improve” university teaching and academic programmes and graduates by enforcing quality insurance accreditation schemes in 1999, 2002 and 2005, development of minimum academic standard (MAS) benchmarks, guidelines on the course system and grade part average (Okebekala, 2004).

As it relates to the research itself though NUC confesses the amount given for it by government amounts to “nothing”, it still turns out to blame the victims – universities for their low quality research output and lack of creativity and innovation to source research fund from industry and other sources in order to move Nigeria towards crossing the threshold to technological development (Okebokola, 2004⁽²⁾). As to make a mockery of the universities the NUC organized the first universities research and development fair, 22-26 November, 2004, in order to create a platform for universities to showcase their achievements and development-oriented research projects and programmes. The UNC ended up collecting N100,000 from each university for entry at the fair which was deserted by the industry. The NUC simply used the poorly organized fair to rank the universities,

once again, based on their so-called research capacity and output displayed (Okebukola, 2004).

Even the World Bank's two separate intervention programmes between 1987 and 2002 of adjusting and innovating the Nigerian university system concerned themselves more with "improving" and "modernizing" teaching and learning processes, equipment techniques and personnel as well as information, management systems than directly improving research capacity, equipment and funding activities in the universities. The universities were worse off before than after undergoing the Bank's harsh conditionality and restructuring, which the Bank admitted to be a total failure (Bako 1994 and 2002).

The 200 million dollars international external funding for African universities by Mac-Arthur and Carnegies organizations, from which the universities of Ibadan, Ahmadu Bello University, Bayero University and Port Harcourt have been benefiting to the tune of 20 million which allows the universities to develop proposals based on their actual needs, and implement them with little conditionality attached, have the promise of providing new laboratory and library equipment, internet facility, computers, strategic plan, and new sources of securing research funds, some partnership with new research centres, and staff training, if not for the corrupt and inefficient administration of these funds by the respective individual universities themselves.

As the NUC has been drastically cutting down the volume of admissions carried out by these universities from say over 300,000 thousands to less 140,000 distributed according to holding capacity of those universities, could not make them pay more attention to research than teaching. Some of the first generation universities, like the University of Ibadan has been cutting down under-graduate admission and teaching in favour of post-graduate admissions and research programmes. The senate of the university has approved the proposal to turn the institution in near future to post-graduate university for which the implications of this policy in terms of turning round the research sector of the university cannot immediately assessed (Niyi Osundare, 2002).

It follows therefore, from the foregoing we propose that the only option left for the Nigerian universities is for them to embark on a new paradigm shift for their total systemic operation, which could assist them to address some of the structural problems and also bring research and development to the centre of their activities. The research that could act as actual booster and facilitator of socio-economic and political development in the country. There should be a fundamental paradigmatic shift in the whole consciousness, policy, conduct and business of making research as the main and indispensable academic component and capital tools for economic and social development.

There is a dire need to raise the consciousness of the Nigerian people, ruling class, government, communities and emerging industrial class about the strategic importance of R X D as the most important component of capital formation and development in the today's global world knowledge economy for where the Nigerian universities and research centres should be properly necessitated, realigned and funded to produce, and utilize it for national capital formation and development in the country.

The country should be made to develop its national research priority and agenda for its today's development and a national strategic research plan for the millennium. There must be a national legislation to back up and support research as part of national economic reform for development, which the state, private sector and communities in collaboration with the universities and research centres should be made to work together and produce for their benefits.

The creation of the research institutional framework for the universities and research centres follows. It is proposed all the first and second generation universities should be converted to research universities, while the other universities should adopt the research teaching ratio 60 to 40 in their academic activities, time engagement, staff recruitment, resource allocation, and the development of facilities and equipment.

Since Nigeria does not have a national core research and scientific community that can be called the country's knowledge community, but a collection of about 30,000 university teachers, and research civil servants, whom have not yet developed only collaboration or associations between and among them beyond trade-union level. A country's capacity for research and development of knowledge economy is measured by the size and quality of its scientific community. For example, the emergence of China as a new player in the process of globalization outside OECD can be partly attributed to its development of its scientists as noted;

“In 2003, China has the second highest number of researchers in the world (862,000) behind United States(1.3 million in 1999) but a head of Japan (675,000 and Russia (487000). Among the major OECD regions, Japan had the highest number of researchers relative to total employment (10.4 per thousand), followed by the United States (9.3) and the European Union (5.8)” (OECD Science, technology and Industry Scoreboard 2005 p.2).

Secondly, there should be a decisive shift of funding for research to be generated by the public and private sectors in the country. Both should be made to designate a specific percentage of their expenditure on research and development. Thus, the United States remains Central to knowledge creation in the OECD area because it is the largest global spender on research and development (R & D) which it spent 285 billion USD in 2003 or 42% of the OECD total. This is a head of European Union (211 billion USD or 31% of the OECD total, Japan (114 billion USD 17% of the OECD total and China (85 billion USD. In the same vein, the United States also had a highly R & D intensity, of 2.6% of GDP in 2003, below Japan's (3.2%), but well a head of EU (2.0%) and China (1.3%). The United State remains the largest private spender on R & D, spending 196 billion USD in 2003 or about 43% of the OECD total. Relative to business sector value added the intensity of business R & D in the United States has fallen from its peak of 2.9% in 2000 to 2.6% in 2003. This is below Japan at 3.2% but a head of the European Union, at 1.7%. Infact, again the United State has the second highest government R & D budget as a percentage of GDP (around 12%) of the United Kingdom is the second largest. In recent years, there has been higher growth in the public R & D budget in the United States 7% annually from 200 to 2005 than in the EU (1.5% per annum since 1995), Japan 6% from 1995-2003 (see OECD Science, Technology and Industry Scoreboard 2005 p.1).

This is to say the Nigerian state has to earmark a certain percentage of its annual budget and GDP to R & D. and it should not be less than 2 percent at least in the next two decades of its development. Furthermore, the ETF as proposed by Longe should be return to its original idea for augmenting research in the universities; this is a part from five percent of their profits which should be invested in local R&D within the Nigerian universities and research centres.

Another crucial level of paradigmatic shift should in the conduct and functions of research itself. Research as a purely an affair of acquiring higher degrees by students and promotions for university teachers should cease and be subordinated to national research priorities and goals. The practice of conducting research from the perspective of disciplinary and scholastic perspective should give way to community/state/private sectors driven, tran- disciplinary, strategic and problem solving in the country.

The senseless and distorted production of manpower by the universities, should be stopped immediately, the new research universities should retrain the surplus manpower in the country and use it productively, or repackage it and make it part of the Nigeria an exporting earning item in its trade with other countries.

Research for research sake should be abandoned. It should made part and parcel of capital investment that must yield high economic returns through the generation, dissemination and application of knowledge to specifically address and resolve such national problems of underdevelopment, mass poverty, corruption and institutionalization of democracy good governance and cohesive national culture.

This is to assert that there is no way R&D can emerge and become a social affair unless it is treated as a developmental affair to the extent of replacing the mode of accumulation based on looting, misappropriation, inflated contracts and rent collection by the state and private sectors and their agencies from the oil revenue royalty to and research knowledge based mode of accumulation, which is the fastest, developmentally most influential and currently most competitive in the world.

CONCLUSION

In the foregoing discussion an attempt was made to trace how and why research and development which featured rather prominently in the first and second generations universities up to the mid 80s, has systematically declined to a point of collapse, ironically, in the midst of mass proliferation of universities and research centres in the country.

This paper blamed the episode of the Rise and Fell of R&D principally on the colonially inherited paradigmatic fixation and its post-colonial ridiculous implementation particularly in the second phase of evolution of Nigerian higher education under the programmes of structural adjustment.

This one-sided paradigm has greatly influenced the forms, functions and goals of universities, particularly by defining and limiting their roles in the development processes to teaching and production of manpower at the total exclusion of research in order to advance and improve society. Though man-power production is central to modern development, as it facilitated the decolonization and Nigerianisation of the Nigerian state, economy and even the universities and also

provide a veritable avenue for the formation of a modernizing elite, manpower capacity, quality and relevance to development, however, is squarely dependent upon the degree of development of research and development of the producing institutions.

Research is the only source for generating and advancing the frontier of knowledge, skills training and expertise for manpower, and therefore, the most important factor which, facilitates and accelerates economic development and improved living conditions in society.

One major fallout arising from the paradigm that emphasizes teaching and manpower production without corresponding research is of-course, now the cumulative but yet growing mismatch between the produced manpower and the actual needs of the national and global economies. This is evidenced not only in the outmoded curriculum, instructional materials and teaching and learning methods, most of which have not been revised or reformed since the establishment of the universities, but also the uncontrollable growing size of low quality and irrelevant graduates, the bulk of which are either employed or unemployable, or both.

It is now estimated that there is over one million unemployed graduates roaming streets, whose number has been increasing by at least two hundred thousands annually from the universities. The Nigeria economy and state under deep recession and deregulation cannot only absorb less than twenty percent of total university graduates. The State itself has been undergoing serious down sizing itself. This is also compounded by the fact less than forty percent of those that qualified to get admission actually secure it in the Nigerian universities.

The crux of the matter is that while the traditional non knowledge based economic sectors have continued to progressively shrink; the knowledge based industries have not been growing and expanding due particularly to the collapse of research and development in the Nigerian universities and research centres.

Currently, Nigeria is rated to have the greatest problems of graduate unemployment; greatest need of knowledge based industries for economic expansion and experiences the biggest crises of stagnation and symbolic expansion within its higher education, which could be attributed to nonchalant attitude to building up research capacity, research and scientific community and investing handsomely in the R&D for socio-economic development.

Since the early 1990s, the Nigerian government, National Universities Commission (NUC), World Bank and other external funding agencies, and some of the universities themselves have been trying address the above problems with little success. Most of the remedial measures employed just have avoided the major source of the problem of paradigmatic shift on which the universities were constructed.

The Nigerian government, among other things attempted establishing diversified and specialized technological, agricultural and even military universities to distinguish them from the conventional ones set-up at independence. Later it created which it called Educational Trust Fund (ETF) a compulsory private sector tax levy initially conceived to be a research fund. On its part, the Nigerian universities commission has increased the science/arts admission ratio to 60 to 40 for conventional universities. It has created a research provision in the university

budget system, introduced quality assurance and accreditation schemes, and cut down admission to universities to their basic holding capacities. The World Bank, on its part during its two interventions loan facility programmes into Nigerian university system, concentrated on improving the quality of teaching and learning, management and information systems, while Mac-Author and Carnage have been working on training of teachers, provision of equipment, access to university education, and linking them to information and communication technology.

Some of the first generation universities like the University of Ibadan have been working towards turning themselves into Post-graduate universities. In all these remedial efforts of reforms, the attention has directed more on the effects of declining research capacities such as the deterioration of teaching and learning than actually reviving and invigorating the research sector and activities in the universities.

The solution which this paper proposed lies with the fundamental paradigmatic shift of university education. The first set of solutions deal with the paradigmatic shift in the whole consciousness, policy, conduct and business of making research in the universities and research centres as essentially an indispensable academic component of these institutions and also the necessary tool for development in the country. At the national level, the country should be able to develop its own research priority, agenda and strategic plan which all researchers must abide to and execute. This should lead to creating research institutional framework within the universities and research centres. The first generation universities should be converted to research universities, while in all other universities the ratio of research to other academic activities including teaching, should be 60 to 40.

At the moment, there is nothing like the country's core research and scientific community, but a collection of university teachers and research-civil servants who have not developed any national inter and intra institutional research partnership networking and linkages among themselves, but simply at the trade union level.

At the second level, it follows there should be a decisive shift also at the funding of research, in which public and private contribution should be clearly designated and earmarked in terms of volume and investment capital. The state should earmark a definite percentage of its GDP, two percent, at least, at the beginning for research and development. While, the Educational Trust Fund should return to its original idea of being solely a research fund. All private enterprises should invest at least five percent of their profit in R&D within Nigerian universities and research institutes.

Finally, another crucial level of paradigmatic shift should be undertaken in the conduct and functions of research itself. Research as it exists should not simply be as exercise in acquiring of degrees and career development for teachers, but should be subordinated and dictated by the national research priorities and goals. The current practices of conducting ivory tower, disciplinary and scholastic research should give way to community/state/private sectors driven, trans-disciplinary, strategic and problem solving research that would eradicate

underdevelopment, poverty, corruption and build strong and solid democracy and good governance at the all levels of society.

Research for research sake should cease. It should be part and parcel of capital investment in which the generation, dissimilation and application of knowledge should replace or supplement capital accumulation, human development and prosperity in the country. This is to say research should constitute its own mode of accumulation that could supplement gradually or replace other modes of accumulation in Nigeria such as looting, corruption, rent and commission collection and profiteering in order to open up and increase national based knowledge economy in the country. The Nigerian universities and research centres, under this new paradigm, should enhance the Nigeria's research capacity and output to harness, domesticate and utilize the global knowledge as well as explore and develop the indigenous knowledge systems for the rapid socio-economic development, independence, integration and prosperity of Nigeria and Africa.

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