UNIVERSITY OF UYO

CONVOCATION LECTURE

OF THE

DELIVERED BY

YAKUBU ABOKI OCHEFU, PhD
Professor of History and Development Studies,
Benue State University, Makurdi, Fellow,
Historical Society of Nigeria (FHSN), Fellow,
Nigeria Academy of Letters (FNAL)

At The 1000 Seater Capacity, TETFund Auditorium
Main Campus, Nwaniba Road, Uyo

6TH NOVEMBER, 2024

2:00 PM

29TH & 30TH COMBINED CONVOCATION CEREMONY

YAKUBU ABOKI OCHEFU, PhD

Professor of History and Development Studies, Benue State University, Makurdi, Fellow, Historical Society of Nigeria (FHSN), Fellow, Nigeria Academy of Letters (FNAL)

A Citation Of

YAKUBU ABOKI OCHEFU, PhD

Standing before us is a great historian, development consultant, university administrator and entrepreneur, Professor Yakubu Aboki Ochefu was born in Kaduna State on October, 24 1960, into the family of Late Col. Anthony Ochefu (Rtd) a one-time Military Governor of the erstwhile East Central State from July 1975 to February, 1976 and Madam Ochefu.

Yakubu commenced his primary education at the Army Children School, Kaduna, and completed it at St. Bernadette Private School, Abeokuta, Ogun State. Thereafter, he proceeded to St. Gregory's College, Obalende, Lagos State for his secondary education.

Prof Ochefu studied in the Department of History, University of Calabar, from 1978 to 1982, and emerged the best graduating student in his year, winning the coveted Prof. Eyo Ita Prize. Prior to his graduation, he had bagged a Federal Government Merit Award in 1981. On the heels of the T. A. Hammond Scholarship, Yakubu proceeded to the Centre for West African Studies, University of Birmingham, United Kingdom in 1984, from where he obtained an MA degree in Political Economy and Economic History. He later returned to his *alma mater,* the University of Calabar, for the doctoral programme in African Economic History, which he completed in 1992.

This fine scholar and committed teacher, cut his teeth in academics in 1985 when he was appointed lecturer in the Department of History, University of Calabar. He later joined the league of pioneer academic staff of the Benue State University, Makurdi in 1993. It is to the credit of this great historian that he helped in the establishment of the Department of History in Benue State University, a department which stands tall today among departments anywhere in the world.

As an arduous teacher and assiduous researcher, Prof Yakubu Ochefu was promoted to the rank of professor in 2003. The Distinguished Convocation

Lecturer has held many sensitive administrative positions at Benue State University, some of which included Head of the Department of History, Dean of Student Affairs, Director of Consultancy Services, and Deputy Vice-Chancellor. Having laid a solid foundation as a seasoned University administrator, Prof. Ochefu was appointed pioneer Vice-Chancellor of Kwararafa University, Wukari, Taraba State, where he superintended over the affairs of the institution from 2012 to 2017. During his years as Vice-Chancellor, Prof. Ochefu also served as Secretary-General of the Committee of Vice-Chancellors of Nigerian Universities and Committee of Pro-Chancellors of Nigerian Federal Universities in 2019.

Despite his deep involvement in university administration, even from the early stage of his teaching career, our Distinguished Convocation Lecturer never lost sight of his duties and obligations as a lecturer and professor of history. He has always been, and still is, deeply involved in teaching, research and supervision. At the moment, he has supervised well over 100 undergraduate research projects between 1986 and 2010. He has also midwifed the birth of 5 MA and MSc dissertations, and 15 PhD theses between 1993 and 2023. He is currently supervising 3 PhD students.

Over the seasons during which he ploughed the vineyard of scholarship, Prof Yakubu Ochefu also stretched his helping hands to other universities in Nigeria by serving as external examiner to many of them. Some of these are the University of Nigeria, Nsukka, University of Jos, University of Abuja, University of Port Harcourt; and Nnamdi Azikiwe University, Awka, where he has supervised their graduate students' work. He has also served as external examiner to the University of Calabar and the University of Abuja for their undergraduate programmes. Between 2003 and now, Prof. Ochefu has examined 50 MA and 15 PhD candidates. Beyond adjudicating the research works of other Universities, he has also been involved in the assessment of many candidates for promotion at the professorial level for many Universities and tertiary institutions, including the Nigeria Defence Academy and the University of Uyo.

The National Universities Commission (NUC) also tapped from the scholarly endowments of Prof. Yakubu Ochefu when he was appointed a member of the NUC resource verification and accreditation teams to various Nigerian Universities from 2008 to 2012. In 2020 he was appointed Chief Reviewer for the Core Curriculum and Minimum Benchmarks for BA History programmes for

Nigerian Universities still under the auspices of the NUC.

At the international level, Prof. Ochefu currently serves as a Visiting Professor at the School of Management and Social Sciences, University of Lincoln, United Kingdom. He also sits snugly on the Board of several scholarly journals, and is a member of the Governing Councils of Pan Atlantic University, Lagos; Wesley University, Ondo; and Maduka University, Ekegwe.

Beyond classroom and examination settings, Prof. Ochefu has contributed immensely to knowledge through his intellectual and entrepreneurial prowess. As an astute professor of Economic History and Development Studies, he has published over 85 works in a bid to advance knowledge in his area of specialisation. His current research hinges on developing frameworks for creative funding for higher education, easy-to-deploy content in digital history project in Nigeria, and DNA evidence to examine intergroup relations among Nigerian communities.

Prof. Yakubu Ochefu's scholarly and intellectual contributions to the development of the society have not gone unrewarded. They have endeared him to many individuals, organisations and corporate bodies. He has been recognised with numerous honours and awards including Fellow of the Historical Society of Nigeria, Fellow of the Nigeria Academy of Letters, Special Fulbright Fellow, and Fellow of Qatar Foundation on World Innovation Summit in Education Leadership.
In 2016, Prof. Ochefu was honoured with the World Education Congress Award for Academic Leadership in Challenging Environment. He has also held many leadership positions, such as National President of the Historical Society of Nigeria, National President of the University of Calabar Alumni Association Worldwide, and National Chairman of the Conference of Alumni Association of Nigerian Universities.

Outside the four walls of academia, Prof. Ochefu is a consultant *par excellence*. He has consulted for the World Bank, UNDP, DFID and International Republican Institute. He has also been a Governance Advisor on Development strategies for Benue and Cross River States. Our Distinguished Lecturer is not left behind in the contemporary information-driven age, as he is an Information and Communication Technology Consultant. In this regard, he has served as the

Chairman of Benue State Information Systems Committee and National Coordinator of the Digital Bridge Initiative, one of the largest e-Education deployments ever in Nigeria.

Prof. Ochefu has been an IT team leader for the development of transaction portals for numerous institutions of higher learning in Nigeria, Liberia, Ghana and Uganda. He assisted many institutions in developing their Information and Communication Technologies and Distant Learning Policy documents. Prof. Ochefu is currently the Chairman of the Implementation Committee of the TETFUND-sponsored National Academic Research Repository Development Committee.

Away from hardcore scholarly engagements, Prof. Ochefu also engages in part-time entrepreneurial activities and services. He is the founder of Orbit Computers, one of the earliest ICT companies domiciled in Benue State. He co-founded and served as Pioneer MD/CEO of Novasys, a software-as-a-service company in Lagos. He has also promoted a few business ventures in academic publishing through his establishment of the well-known Aboki Publishers in Makurdi, which today is one of the oldest and biggest Academic Publishing Houses in Central Nigeria. He has sat on the board of some companies and non-governmental organisations.

'All work and no play makes Jack a dull boy', so goes the old saying. Prof. Ochefu is, hence not “all work”; he also plays. For instance, in his undergraduate and postgraduate days, he was a member of the University of Calabar judo, cricket, basketball and hockey teams. He is a NUGA 1982 silver medalist in judo, a certified Judo Coach and former Chairman, Benue State Amateur Judo Association. His other areas of sports include golf, handball, basketball, motor rally and superbike racing.

Apart from academics and sports, Prof. Ochefu invests his time in research and in discussing disruptive technologies and creative processes, Futurology Studies, the African Diaspora, Creative Funding for Education and Infrastructural Development using Dynamic Funding Models, Technology-driven Governance and Reforms, Virtual/Augmented/Mixed Reality, Artificial Intelligence, Machine Learning, Biomimicry, Bioinformatics, and their practical applications in higher education, agriculture and public governance.

A summation of Prof. Yakubu Ochefu's life style shows him as a man driven by three passions - passion for teaching and research in History; passion for using technology to drive change; and passion for development and wealth creation. He is a team player and has a good command of verbal and written communication skills, excellent teaching, mentoring and coaching strategies, and cultural awareness from extensive travelling, studying and living with people of diverse backgrounds around the world. He is a widely travelled scholar who has visited over 33 countries in Africa, Europe, North America and Asia, and has covered all the 36 States in Nigeria.

A holder of the Chieftaincy title of *Ola'Yala* bestowed on him by the Yala Kingdom of Cross River State in 2011, Prof. Ochefu is happily married to Hilda Ihinwa Ochefu, and the marriage is blessed with three adult children. He enjoys reggae, heavy metal rock and roll, Soukous, Fuji, traditional opera and drum beats, and classical music. Our Distinguished Convocation Lecturer also enjoys skydiving, rain forest hiking, martial arts and watching of television documentaries.

The Vice-Chancellor and Chairman of this historic Convocation Lecture, ladies and gentlemen, it is my pleasure to present to you an accomplished and astute scholar, a renowned historian, a seasoned administrator, a diligent entrepreneur, a warm-hearted husband, a passionate father, a great teacher and consummate researcher and Lecturer for the 29th and 30th Convocation of our great University of Uyo, Professor Yakubu Aboki Ochefu!

IGNORING THE CASSANDRA: THE FATE OF UNIVERSITY EDUCATION IN NIGERIA

Convocation Lecture

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Professor of History and Development Studies, Benue State University, Makurdi, Fellow, Historical Society of Nigeria (FHSN), Fellow, Nigeria Academy of Letters (FNAL)

AT THE

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DATE: 6TH-9TH NOVEMBER, 2024 **TIME:** 2:00PM

IGNORING THE CASSANDRA: THE FATE OF UNIVERSITY EDUCATION IN NIGERIA

BY

YAKUBU ABOKI OCHEFU, PhD.,

PROFESSOR OF HISTORY AND DEVELOPMENT STUDIES, BENUE STATE UNIVERSITY, MAKURDI FELLOW, HISTORICAL SOCIETY OF NIGERIA (FHSN), FELLOW, NIGERIA ACADEMY OF LETTERS (FNAL)

BEING A CONVOCATION LECTURE UNIVERSITY OF UYO, 6TH NOVEMBER 2024

Introduction

Ladies and Gentlemen, for us in the humanities, identifying with a few Greek and Roman gods and goddesses helps us take a deep and broad view of our discipline. Four of them usually stand out: Clio, the goddess of history, Janus the god of all beginnings, endings, gates, transitions, time, choices and duality, Hermes, the god of human heralds, travellers, thieves, merchants, and orators, and Cassandra the goddess of prophesy who was fated never to be believed. Clio and Cassandra are often inextricably linked as History teaches us to learn from the past. Cassandra peers into the future and warns of impending dooms but her prophecies are often ignored by stakeholders never giving them the opportunity to "learn" from history.

I take a 40-year history of the Nigerian university system and show that warnings about its trajectory were ignored by key stakeholders such as the proprietors at federal and state levels, the operators consisting of Governing Councils, and Management and the end-users who consist of students and their parents. I cogitate on the state of preparedness and indeed readiness to embrace the profound changes taking place in the 21st century higher education delivery as occasioned by the nature and character of what is often referred to education 4.0. I conclude on an advisory note that our key stakeholders should close ranks and rethink the philosophy of university education in the 21st century so that our Gen Zs who we currently house, and the Gen Alpha who have been described as an on-demand generation born into a world of immediate access to information, AI and data can benefit maximally. This special generation may number two billion and will start entering the university by 2025 and we hope they will not be short-changed by a university system that ignored all the warning signs and is not ready for them.

The Warning Signs

According to the International Association of University Presidents (IAUP), the last fifteen years has witnessed the most dramatic assault on the nature, character and operations of the University system, globally.[1] Its leaders have had to confront challenges brought about by technology, social and political unrest, climate change, and severe economic pressures in an environment often described as

Volatile, Uncertain, Complex and Ambiguous and Hyper-connected (VUCA-H). In addition, the relevance of university education has been questioned by politicians, decision-makers, and other stakeholders. Many University leaders have struggled to keep pace with these changes as information technology has disrupted time-tested models of teaching, learning, and conducting research. Security challenges have impacted negatively, and the coronavirus pandemic has reshaped aspects of our campus life as we know it. Against the backdrop of shrinking budgets, a rise in public scrutiny and students' expectations, massification, and increased commercialisation, the responsibilities continue to grow for our universities and their academic and administrative leaders.

In its 76-year history, the Nigerian university system has witnessed three major growth stages driven by distinct philosophical pointers that mirror the nations developmental challenges. In the first stage, from 1948 to 1980, the primary concern was to build general human capacity for a newly independent nation. From 1980 to 2000, the emphasis shifted to investments in specialised human capacity. This era witnessed the establishment of specialised universities of Science and Technology, Agriculture, Education, etc. In the current stage, a mismatch exists between the interest of the various stakeholders and what the universities can or should do for the nation. Our current national developmental priorities and trajectories do not align with the nexus between university education and the knowledge economy and society. The figures for the Higher Education Participation Rate: which is the rate of the population eligible for university education vs the carrying capacity of its universities is a paltry 8.6%, while the global and African average is 34%, and 12% respectively.[2] Our current governance and funding models do not reflect global best practice. Our reward and reporting systems can at best be described as outmoded, and our teaching, learning and research systems are not student-centred, and outcome-focussed.

In 1973, the Committee of Vice-Chancellors sent a memo to the Military Federal Government raising concerns about funding and access to universities. The committee suggested that some of the campuses of their various universities should be upgraded to full-fledged universities and new ones established. In 1975 as part of the response to that memo and following from some of the recommendations of the 2nd National development plan, the universities of Calabar, Jos, Maiduguri and Sokoto were established in 1975, and Port-Harcourt, Ilorin and Kano became university collages. They were, however, upgraded to full-fledged universities in 1977.

Thirty six years ago, the Academic Staff Union of Nigerian Universities starting raising concerns regarding governance, funding and the curriculum of our universities. This came on the heels of the position adopted by the World bank on the alignments of tertiary institutions to our national development. It took a series of bitter and prolonged industrial actions between 1988, 1992 and 1999 for the Federal Government to respond to some of these concerns. As recently as 2012,

following a prolonged industrial action, the Federal Government under the leadership of President Goodluck Jonathan, constituted a committee on Needs Assessment of Nigerian Public Universities (CNANU) to appraise specific and general needs of Nigerian Public Universities nationwide. The very embarrassing Report of the Committee was presented to the Government in 2012 and in the following year, it set up the Implementation Monitoring Committee (IMC) chaired by the Honourable Minister of Education with membership from Office of the Secretary to the Government Federation (OSGF), Federal Ministry of Education (FME), National Universities Commission (NUC), Tertiary Education Trust Fund (TETFund), Committee of Pro-Chancellors (CPC), Committee of Vice-Chancellors (CVC) and Universities Based Unions (Academic Staff Union of Universities (ASUU), Senior Staff Association of Nigerian Universities (SSANU),Non-Academic Staff Union of Universities (NASU) and National Association of Academic Technologists (NAAT), to implement the report. Government also approved the total sum of N1.3 Trillion within six years to fund the recommendations. It is the lack of diligent implementation 0f this report that has set the stage for the current dispute between the Union and Government. In 2022, the late Emeritus Professor Nimi Briggs-led Committee of Pro-Chancellors of Federal Universities warned on the need for

> …our collective will to work with you (i.e the visitor to the Federal universities, President Buhari) to re-position our universities as the country slowly emerges from the challenging times occasioned by recent events. The volatile, unstable, complex and ambiguous (VUCA) environments that have emerged post-covid **have fundamentally disrupted our educational delivery system** (emphasis mine). As key as policy actors, we are compelled to think deeper and more creatively on how to grow our institutions in these very challenging times.

The above warnings seemed to have fallen on deaf ears or has been "cassandarized" as the stage is now set for another prolonged industrial action across the system.

While we have significant problems in the Nigerian University system, I strongly believe they can become "opportunities" if our current efforts to reform and transform university education synchronises with the interest of the various stakeholders in the education ecosystem. Mr Chairman, let me walk you through some of my thoughts by dimensioning 21st century higher education delivery and its impact, and reviewing some suggestions for a new design for innovation in higher education.

Dimensioning 21st Century Higher Education Delivery.

Globally, the higher education business in general and university education in particular, has transformed over the past three decades. Two major forces have been driving this transformation. These are the role of knowledge in the

development of contemporary societies and the broader application of digital technologies in education delivery. In the case of Nigeria, both drivers can be contextualised historically.

When Nigeria gained independence from Britain in 1960, one of the major development challenges required was considerable investment in education to build human capacity. This was stated clearly at the Conference on the Development of Higher Education in Africa, organised in cooperation with the United Nations Economic Commission for Africa, held from 3rd - 12th September , 1962. The Conference was convened within the framework of resolution 1.14 adopted by the General Conference of UNESCO at its eleventh session and constituted as a follow-up and complement to the Conference of African States on the Development of Education in Africa held in Addis Ababa in May, 1961.[3] Taking into account the long-term requirements of the countries' concern for higher education, and in the light of their cultural, social, economic and technological needs, the Conference set out to identify possible solutions to: (a) problems of choice and adaptation of the higher education curriculum to the specific conditions of African life and development, and the training of specialised personnel for public administration and economic development techniques; (b) problems of administration, organisation, structure and financing encountered in the creation or development of institutions of higher education both from the point of view of the institutions themselves and from the broader angle of national policy. Additionally, the Conference was to provide data to the United Nations, its specialised agencies, and other organisations and bodies concerned with international cooperation and assistance for developing their programmes in aid to, and use of institutions of higher education in Africa.[4]

As of 1962, when the Conference was held, Nigeria had five universities with approximately 3,000 students. Since when this Conference held, the number now stands at 265, with over two million six hundred thousand undergraduate students enrolled.[5]

1948 - 1970:	5	First General
1970 -1976:	13	2nd Generation (the 7 sisters)
1976 -1985:	20	3rd Generation (Specialised)
1985 - 1999:	29	4th Generation
1999 – 2024:	274.	5th to 7th Generations

80 percent of the country's apex institutions were established during the Fourth Republic that began in 1999. By sheer numbers and possibly by the quality of graduates and their likely impact on society, the Fourth Republic can definitely be looked upon as a period that signifies the “golden age” of university education in Nigeria.

In 1962, the significant challenges that confronted universities in Nigeria were primarily four: Improvement of access, best practice for institutional governance systems, Curriculum adoption, and funding. While considerable progress has

been made in mitigating some of these challenges, they remain as vexed issues.

- Shrinking government funding on education (in real terms)
- Poor quantity and quality of teaching and non-teaching staff
- Poor remuneration of university workers.
- Demoralised workers (teaching and non-teaching) - with consequences on student outcomes and experiences.
- Infrastructural deficit and decay
- Inadequate funding of research initiatives
- Curriculum inadequacies leading to students abandoning their programmes, and others looking for alternatives.
- Frustration and migration of students at UG and PG Levels
- Academic Silos vs Academic Scaffolds

Layered on top of these is the digital technology transformation that is fundamentally disrupting several aspects of university operations. A review of education 4.0 elucidates this further.

Education 4.0 and its Disruptive Trail

A noteworthy debate among higher education practitioners is how the university system can confront the changes and challenges occasioned by globalisation, Information technology and data as an economic resource. As academics, we are privy to the disruption of education that is currently ongoing. I will point out just a few of them to highlight our case.

- Universities and academics are no longer the sole custodians of knowledge as we know it.
- Knowledge creation has been privatised and socialised. It is available for free or for a fee and on multiple channels.
- New knowledge in terms of academic disciplines and sub-disciplines, specialisations, content creation, and generation are no longer solely products of academic institutions such as obtained in traditional universities. Corporate Universities, publishing houses, research centres, think tanks, Analytics and Knowledge-as-a-Service firms, and non-governmental agencies are now hubs for generating new knowledge.
- The ubiquity of education is now the buzzword. Face-to-face, Distance/Online/Blended learning. Education anytime, anywhere.
- The fourth Industrial Revolution is changing the nature and character of the "world of work" radically. Competence, flexibility, and multitasking now drive the world more than only subject matter expertise.
- Creative thinking and problem-solving capabilities, team play, analytical/ communication skills and value addition to the "bottom line" are now more important to employers of labour than core subject matter knowledge alone. Collaboration and sharing of knowledge sets, information and skills,

across multiple platforms in the electronic domain is becoming a dominant mode of academic engagements.

- Individual courses and micro-credentials rather than the degree itself, have become very important in the learning environment. The rigid academic compartments/silos, pre-requisites and entry qualifications are giving way to individual interests, academic scaffolds, self-paced learning, aptitude and creativity, all of which are forcing traditional Universities to unbundle some of their services to serve these needs.

So, what are the main Features of Education 4.0 ?

Simply put, Education 4.0 is the latest education model, characterised by the use of technology and digital media. It promotes the application of physical and digital resources that provide innovative solutions to society's current and future challenges.[6] Education 4.0, unlike traditional education, seeks to provide solutions to these challenges using the integration of innovative pedagogies, emerging technologies, and best practices for teaching, learning and research that lead to reflection, problem-solving, informed decision-making, and practical experience. It uses online learning platforms, learner analytic platforms, mobile devices, and digital content as its primary tools.[7]

At the heart of Education 4.0 is the "Open Education" movement that promotes the use of open educational resources (OER) to make educational materials, such as textbooks, course materials, and other educational content, freely available to anyone with an internet connection. The fundamental values of Open Education are learning principles that ensure:

⇒ Learners are provided with opportunities and the capacity for life-long learning

⇒ Learning processes are centred on the learners and the contexts of learning, building on their experience and encouraging active engagement leading to independent and critical thinking

⇒ Learning provision that is flexible, allowing learners to increasingly determine where, when, what and how they learn, as well as the pace at which they will learn

⇒ Prior learning and experience are recognised wherever possible; arrangements for credit transfer and articulation between qualifications facilitate further learning.

⇒ Providers create the conditions for a fair chance of learner success through learner support, contextually appropriate resources and sound pedagogical and andragogical practices.[8]

Education delivery in the 4.0 mode is slowly becoming highly personalised. Learning contents are now available on-demand, enabling students to design and build degree programmes or learning paths/outcomes from various institutions offering courses. Some universities are increasingly becoming masters of content

aggregation, working as intellectual talent and knowledge providers and competing with other bodies such as research and data firms.[9] As "knowledge aggregators", they recover their investments from royalties and license fees from the content, knowledge and other intellectual property activities provided by academics and professionals that they engage. The best universities in the world are becoming like the big football clubs or entertainment companies that go worldwide, identifying, investing in, and harvesting the returns from academic talents. Institutions that cannot invest in content aggregation and technologies will find it harder to compete and cover their operating costs, especially in tuition pricing. The application of dynamic tuition pricing to content will see to this. Those without endowments or public funding support will struggle to survive. The emergence of "lone wolf scholars" who ply their trade in cyberspace and owe no allegiance to an established institution will grow substantially.[10] With online campuses and courses like Udemy, Coursera, FutureLearn and EdX, scholars can teach online and earn good pay without contending with a conventional university's institutional rigidities.

The above scenarios which can be described as the "Disrupted Higher Educational System" is already here. Prominent actors in this regard include Coursera, Udemy, Khan Academy, Alison, LinkedIn Learning (formerly Lynda.com), Udacity, CodeAcademy, Iversity, SkillShare, and General Assembly are already doing all that is mentioned above. Coursera for example, says they "*envision a world where anyone, anywhere, can transform their life by accessing the world's best learning experience*."[11] They currently have 70 million students, 200 Partner Universities, 2,300 Corporations and 325 Government agencies from 27 countries, offering 3,393 courses and 250 specialisations.[12] Their founders, Professors Andrew Ng and Daphne Koller, were academics from Stanford University. Udemy has 100 million students from 195 countries taking 1,000 different courses taught by 75,000 course creators and instructors that are 100% online.[13] Cost ranges from $10 to $300. Alison has 13 million learners from 195 countries, 1,000 courses from which 1.5 million students have graduated since they started in 2007, all for free. Udacity gave us the concept of a "Nano Degree". Their mission is "to democratise education" by offering world-class higher education opportunities that are "accessible, flexible, and economical" . They pride themselves as the market leader in "talent transformation" and currently have 16.9 million learners from 240 countries taking over 300 different courses.[14]

In all these, it has been noted that one of the greatest beneficiaries of the Education 4.0 model are students, parents, and the "Eduprenuers".[15] Decreased cost of content combined with increased competition among professors and lower average ROI for universities per professor is leading to lower tuition costs and higher choice. Professors with interdisciplinary knowledge—the great aggregators—will see license and royalty fees go up as they command economies of scale in distribution. Some of the top instructors on Udemy have over one million students that have taken their courses. On Coursera, it is common to see

five hundred thousand plus students registering for a popular course.[17] Existing institutions with large endowments and the capacity to invest in great talent will tighten their grip on the upper end of the education market. At the same time, others will struggle to compete and survive. Public-Private Institutions, for-profit and publicly traded universities are already emerging as new ownership models.[18] The class of "edupreneurs" will grow and overtake existing institutions providing significantly increased personal choice for all from pre-school to post-graduate studies.[19] Given that the global market value for tertiary education is 65 billion dollars and is predicted to grow at a compounded annual rate of 14.49%, it is not difficult to see why tertiary education is literally busting at its seams.[21] According to the World Bank, the global student population in formal schools in 2020 stood at 220 million students, and is expected to hit 380 million by 2030.[22] Let us digest these numbers as we contemplate a new design for innovative higher education.

Contemplating a New Design for Innovation in Higher Education

David Staley, in a 2015 article titled "Speculative Design for Innovation in Higher Education" noted that; "ideas about innovation in higher education focus too narrowly on technological disruption and the resistance to innovation and disruptive change"[23]. He proposed five models, which I will mention four of innovation in higher education that expand our "***ideas of the Alternative University***" that are as innovative as they are radical. The first is the adoption of a speculative design that targets institutional pedagogical outcomes, which in turn shapes the behaviours of students, lecturers, and governance team leaders; the curriculum; the movement of knowledge and the kind of knowledge exchanged.[24] The need for us to design new paradigms for androgenous learning outcomes has also become key given the need for adult learners to learn new skills that will enable them function in a 21st century world.

The second is the concept of a Polymath University built on the educational philosophy that creativity and innovative thinking emerge from the mashing-up of disparate ideas, from the ability to make connections between what appear to be different concepts. Here, students choose one each from a "menu" of three majors: the professions, the sciences and social sciences, and the arts and humanities. Thus, in a polymath University, a student cannot major in English, History, and Philosophy, or Finance, Marketing, and Accounting. Instead, they would choose triple majors in History, Accounting and Biology, for example, or Finance, English, and Chemistry.

Professions	Sciences/Social Sciences	Arts and Humanities
Accounting	Physics	History
Engineering	Chemistry	English
Business	Sociology	Philosophy
Education	Political Science	Art
Finance	Astronomy	Religious Studies
Architecture	Biology	Theatre

From: Alternative Universities: Speculative Design for Innovation in Higher Education

The third is the concept of the Nomad University. In a world of live-study-work-from anywhere, any time, the Nomad University shifts attention from the classroom to the "real world". As Pieter Spinder puts it, "Why work with case studies in books only, when one can learn from real challenges, real-life assignments, with companies, interactions with governments, and work with non-governmental organisations organised around a specific problem?[26] The Lecturer/Mentor/Coach identifies a problem grounded in a specific research question, and then via a virtual network, the students and the professor decide on the nature of the problem and the outcomes for completion (success). They assemble at a location determined by the professor, where they will work together on the problem for a specified period. When the participants and their clients are satisfied that some equilibrium solution has been achieved, the student-faculty ensemble disassembles until they meet again at another location to work on a new and different problem.[27]

Perhaps the most radical of his proposed innovation is the suggestion of an Interface University, which presumes that humans and computers thinking together are better than humans or computers thinking alone. Thinking with machines allows students to engage in a level of cognition not possible with the human brain alone. Thus, at Interface University, students learn how to "think with computers." Lecturers and students treat the computer not as a tool but as a "third hemisphere" of the brain, and higher learning means developing a metaphorical "corpus callosum" with this digital hemisphere.[28] In this regard, we contemplate the current projects and products involving “digital implants” by companies such as Neural Link, Parodromics, and Neurable to mention just a few.

From ethology and evolutionary anthropology, we know that humans have always had hybrid minds. Long before the invention of the computer, human beings engaged in cognition coupled with external tools. The development of writing, propulsion, and lift systems, for example, were not mere tools they were levels of cognition unattainable to pre-literate humans. Thinking and cognition are functions of the external technological prosthesis employed by humans. The networked computer represents the subsequent greater cognitive prosthesis.[29] Thus, the Interface University revolves around intimacy with tools while assuring lecturers and students that the ***homo sapiens*** can only be enhanced and cannot be replaced by the ***homo digitalis*** driven by computers and other machines. The buzz currently being spawned by Generative Pre-trained Transformer (GPT) large language models using deep learning protocols based upon natural language processing (NLP), is an example of what the Interface University is proposing.[30]

Is the Future DARQ and Bright?

What Stately sees as he peers into the future is familiar. We are already beginning

to see glimpses of his vision in some institutions of higher learning in countries worldwide, including some from Nigeria and other African countries.[31] These institutions are at the forefront of infusing in their curriculum the type of skills many employers look for in university graduates. These are oral and written communication, creative and critical thinking skills, numeracy and problem-solving skills, empathy, ethical judgment, and integrity.[33] The Institute of the Future, in a 2018 report, has identified ten work skills for the future: "Rather than focusing on future jobs, the report looks at future work skills "proficiencies and abilities required across different jobs and work settings." They include:

- Sense-making: the ability to determine the more profound meaning or significance of what is being expressed
- Social intelligence: the ability to connect to others deeply and directly, to sense and stimulate reactions and desired interactions
- Novel and adaptive thinking: proficiency at thinking and coming up with solutions and responses beyond those which are rote or rule-based.
- Cross-cultural competency: the ability to operate in different cultural settings.
- Computational thinking: the ability to translate vast amounts of data into abstract concepts and to understand data-based reasoning.
- New-media literacy: the ability to critically assess and develop content that uses new media forms and to leverage on these media for persuasive communication.
- Trans-disciplinarity: literacy in and ability to understand concepts across multiple disciplines.
- Design mindset: the ability to represent and develop tasks and work processes for desired outcomes.
- Cognitive load management: the ability to discriminate and filter information for importance and to understand how to maximise cognitive functioning using various tools and techniques.
- Virtual collaboration: the ability to work productively, drive engagement, and demonstrate presence as a member of a virtual team.[33]

The above skill sets were important considerations in the development of the new core curriculum and minimum academic standards for the Nigerian University system. In this regard, Nigerian universities have begun incorporating these education 4.0 tenets into their curriculum.

How do we Tap into the Opportunities?

Academic leaders of institutions of higher learning in Nigeria are uniquely positioned to tap into the opportunities provided by the disruptions caused by Education 4.0. Three examples to buttress these opportunities are presented here. In the global knowledge-driven ecosystems, electronic information technology, using low-cost communication of ever-increasing capacity for "Anyone, Anywhere, Anytime, Any device" based on 4G and 5G platforms, is the new

normal. Media-rich and interactive platforms, 3-D and mixed reality technologies, 3-D printing and biometric or RFID Technologies are now the general standards. In this regard, the technology cocktail generally referred to as DARQ (Distributed Ledger (Blockchain), Artificial Intelligence (AI), Extended Reality and Quantum Computing, is gradually replacing the hitherto SMAC (Social, Mobile, Analytics and Cloud) technologies and will become the major trend that will drive the technology world and by so doing, education, in the next five years. The DARQ technology market generated a revenue of $640 million in 2019 and is expected to rise at a CAGR of 16.5% between 2020-2025.[34]

To ensure that Nigerian Universities play in this emerging technology threshold, stakeholders such as the National Universities Commission, Tertiary Education Trust Fund and the Committee of Vice-Chancellors are developing a DARQ project which seeks to galvanise support for the training of Nigerians in DARQ technologies. The plan is to train a significant number of MSc/Ph.Ds. and postdoctoral fellowships in each of the cocktails over the next ten years so that we can develop a strong talent pool that will drive teaching, research, innovation, and adoption of DARQ solutions for the country.

The second is a review of our approach to entrepreneurship programmes and Innovation Studios to encompass action based learning for low-cost but high-value activities such as vermiculture, ceramics, bamboo and exotic grasses, software and electronics design, 3-D Printing and CNC rapid prototyping and recycling. The global market opportunity for ceramics is 165 billion USD, with a CAGR of 3.7%. Insect-based animal feed is currently valued at 20.6 billion dollars, with a CAGR of 3.5%. In terms of market revenue, the African edible insect and insect protein market was worth $200 million in 2022 and is estimated to reach $3.3 billion by 2032, with a CAGR of 15.9%. Black soldier fly farming alone is to account for 40% of this amount. They represent enormous opportunities for our universities.[35]

The third is providing the framework for our institutions to view data as an economic resource. According to the Digital Economy Report 2019- Value Creation and Capture: Implications for Developing Countries (United Nations Conference on Trade and Development), the opportunities in the capacity to collect, analyse and monetise digital data for African institutions of higher learning are huge.[36]

For all the above to happen, our key stakeholders such as Federal and State Governments, National and State Assemblies, the Staff Unions and Alumni Associations, students and parents must key into the following reform agenda:

I. Review/Harmonize the Existing Laws that impede the nature and character of development of modern universities and especially investment opportunities in tertiary institutions.

ii. Review of Concessioning Laws and its applicability to tertiary Insitutions
iii. Extension of Tax Credit/Special Investment Fund Schemes to Educational/Tertiary Insitutions via Blended Financing.
iv. Promotion of "Alumni Economy" Schemes
v. Promotion of Build-Operate-Lease schemes to meet infrastructure shortfalls
vi. Mandatory "Business Skills" training for University leaders and adoption of Pan-Atlantic University model of appointment of a "COO" in the university governance structure.
vii. Upgrade/Expansion of the current "Mammy/Labour Market system into full blown "economic corridors" on university campuses.
viii. Adopt creative ideas like the use of Differentiated Unit cost and dynamic pricing of fees, for academic programmes.
ix. Dual mode compensation schemes for university workers.

Can we put on the table creative ideas like the use blended financing to fund education and its role in National Development.?

- A global IPO of 2-5% Federal Government Equity in NLNG will raise enough money to serve as seed funds for a National Research Council that will commercialise research outputs.
- IFC/ADB Concessonary Funds for Tertiary Institution Investments
- Alumni-based and driven business models, Universities as business ecosystems, educational infrastructure-as-a-service / device-as-a-service models.
- University Impact Bond Schemes

According to the African Development Bank, only about 6% of young people in sub-Saharan Africa are enrolled in higher education institutions, compared to a global average of 26%. This indicates significant growth potential for the sector. The African Union's Agenda 2063 emphasizes the role of higher education in achieving continental development goals, creating opportunities for universities to align with national and regional priorities. We must sieze the initiative and explore these opportunities.

Conclusion

In 1993, when the use of the internet started becoming popular in universities, there was unease amongst senior academics who feared that it was going to disrupt the way we teach and conduct research. At the 2013 World Innovation Summit on Education in Doha, Qatar, the Vice-Chancellor of Oxford University, Prof Professor Andrew Hamilton, to calm frayed nerves over the perceived threats by the then emerging MOOCs in global higher education, noted that the University system is a very resilient one.[37] Let us imagine for once the debates by our predecessors when the first bubonic plague took place in the 14th century or when the first industrial revolution occurred in the 18th century. Also, imagine what they

thought during the first and second world wars. We are all witnesses to the recent global cataclysmic disruption during the COVID pandemic. We can recall our debates, fears and assurances as the pandemic raged. The rouge element these days is Artificial Intelligence. Many of our colleagues are "horrified" with what AI is doing to our students. But as Philippa Hardman of the London School of Economics puts it, ... If the purpose of higher education is, as UNESCO states, to promote the exchange of knowledge, research and innovation and to equip students with the skills needed to meet ever-changing labour markets, by banning the use of tools such as ChatGPT we fail to deliver value and run a high risk of irrelevance in a post-AI world.[38]

Distinguished colleagues, as disruptive as some aspects of Education 4.0 are, they complement our age-old traditional functions and obligations to teach and advance knowledge through research. The role of higher education in the social, cultural, and economic development of Nigeria first espoused in the 1962 summit, will continue to include:

- To maintain adherence and loyalty to world academic standards
- To ensure the unification of Nigeria and Africa;
- To encourage elucidation of and appreciation for Nigerian and African culture and heritage and to dispel misconceptions of our country and continent through research and teaching of African studies;
- To develop the human resources for meeting human resources needs completely;
- To train the 'whole human' for nation-building;
- To continue to evolve a genuinely African pattern of higher learning dedicated to Africa and its people yet promoting a bond of kinship to the larger human society.[37]

Vice-Chancellor Sir, I have been critiqued by some colleagues for talking about Education 4.0 in "Nigeria Society 1.0". No light, no water, no infrastructure, widespread poverty in a land filled with serious security challenges. My typical response is that as academic leaders, we must continue to encourage and push our political leaders to improve investments in our society in general and universities in particular. We must continue to develop innovative curricula that are polymath and problem-solving-based and relevant to the current and future needs of the labour market and the promotion of research, innovation and scholarship. The provision of scholarships and other forms of financial assistance to students and staff must take a front burner such that no student is denied university education on account of lack of funds. We must challenge ourselves to constructively disrupt the current scheme of things if we are to reorient and reposition our universities to take a leading role in a fourth industrial revolution and a knowledge-driven Nigeria.

Our university leaders must demonstrate a deep and clear understanding of VUCA-H and VUCA 2.0 Principles (Vision, Understanding, Courage, Adaptability). An understanding of new ways of managing and meeting

stakeholder expectations, creative and innovative thinking and risk management must stack high in our operational repertoire. Our institutions must also go beyond the triple helix model of the university-industry-government relationship to include the-public-(quadruple) and the environment (quintuple) interactions within a knowledge economy. The quadruple helix model incorporates the public via the concept of a 'media-based democracy', which emphasises that when the political system (government) is developing innovation policy to develop the economy, it must adequately communicate its innovation policy to the public and civil society via the media to obtain public support for new strategies or policies

The major stakeholders in university education such as the Ministry of Education, the Ministry of Finance, National Planning, the National Universities Commission, JAMB, TeTFund, the Committee of Pro-Chancellors and Vice-Chancellors, the various academic and non-academic Unions, Alumni Associations, parents, students, and members of the host community where Universities are located must share to a large extent the vision of a productive university system that works for all.

Finally we must let the whole world know that the view popularised *by* Geoffrey Boulton, Vice-Principal of the University of Edinburgh,*that says;*

> ***changing a university is like moving a graveyard, you get no help from the people inside! The temptation to weak rectors or governing boards is to manage this potential anarchy so strongly that all autonomous creativity and diversity of action is squeezed out. We must not fall prey to the fallacy of managerial primacy, that things that make management difficult necessarily need to be removed or reformed****...,* is not entirely correct.

This is why we must consider flipping our current situation by turning our problems into opportunities. I recommend that all our leaders (and indeed students) read Berthold Gunster's book, on "*Flip Thinking*", learn lessons from Clio and take Cassandra's prophesies seriously.

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