

Covenant University

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TECHNOLOGICAL DISRUPTION AND TERTIARY EDUCATION: REDEFINING LEARNING FOR THE FUTURE

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Thursday, July 19, 2018



13TH CONVOCATION DISTINGUISHED LECTURE

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By

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Citation

Dr. Temitope Fasoranti, has spent over 26 years in the Nigerian Banking Industry. He obtained a Bachelor's degree in Economics (1988), a Master's degree in Economics (1991) and a PhD in Economics all from the Obafemi Awolowo University (OAU) Ile-Ife.

He worked in FBN Merchant Bankers from 1991 – 1997 and joined Zenith Bank in 1997. Prior to his appointment as Executive Director he was a General Manager/Group Zonal Head overseeing several branches in Lagos which includes Ikeja Zone, Apapa Zone, Ilupeju Zone and was Group Head of Oil & Gas, Conglomerate Group, Agriculture Desk etc.

He has attended several local and international courses and programs including Changing The Game: Negotiation and Competitive Decision Making (Harvard Business School), Creating and Leading High Performance Teams (The Wharton School, Pennsylvania, USA), and Developing Strategy for Value Creation (London Business School).

He is a member of the Nigerian Institute of Management (NIM), an honorary member of the Chartered Institute of Bankers of Nigeria (CIBN), The Institute of Credit Administration and a sitting board member of Financial Institutions Training Centre (FITC).

His experience covers Treasury, Corporate Finance, Corporate Banking, Retail Banking, Risk Management, Branch Management and Zonal Management.

He is married with 3 children.

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PROTOCOL AND PREAMBLE

I am very delighted to be invited to deliver the 13th Convocation Lecture of Covenant University.

I would like to express my profound gratitude to Dr. David Oyedepo, Chairman, Board of Regents and Chancellor; Prof. AAA. Atayero, Vice Chancellor; Management; Faculty; Staff; and Students for inviting me as Convocation Lecturer at the 13th Convocation Ceremony of Covenant University – "The Release of Eagles 2018".

It is a genuine source of joy for me to be invited to this prestigious citadel of academic excellence to join the list of distinguished men and women who have mounted this rostrum as Convocation Lecturer since 2006 when the first set of "Eagles" were released. The list of distinguished individuals includes some of the great achievers within and from outside our shores, such as – Professor Joy Ogwu, a renowned academic and diplomat who delivered the 1st Convocation Lecture in 2006, and our amiable Professor Yemi Osinbajo, Vice President, Federal Republic of Nigeria, who was the 9th Convocation Lecturer in 2014, amongst others.

I also acknowledge eminent individuals who have been Convocation Keynote Speakers, including Mr. Jim Ovia, *CON*, Founder and Chairman of Zenith Bank Plc, who was the 3rd Convocation Keynote Speaker in 2008. It is noteworthy that The Africa America Institute (A A I) recently signed a Memorandum of Understanding with Covenant University to partner with the Jim Ovia Foundation Leaders Scholarship (JOFLS) as part of a vision to create a network of future leaders that would rewrite the story of the African continent. The choice of Covenant University as a partner for the Jim Ovia Foundation Leaders Scholarship attests to the culture of excellence and quality leadership of this great institution.

Since its inception in 2002, Covenant University has established itself as a vision-driven university, and a beacon of excellence, producing path-finding, pacesetting and trailblazing graduates in various fields of endeavour who are deeply rooted in biblical principles, redeeming the dignity of the black race, and doing great exploits for the advancement of humanity. These feats have been achieved because Covenant University has evolved a unique, broad-based, qualitative and lifeapplicable training system that focuses on value and skills development.

I have sought to understand the driving force behind the success story of Covenant University. How is it that this institution was able to transit from a young university which opened its doors in 2002 to a world record maker? How does one account for the resounding achievements of this University in an educational sphere that is blighted by widespread underachievement? The vision of this University gave me a fair idea. The task of leadership cannot be achieved without innovation. In point of fact, setting up a university and seeking to make a leader out of every student is nothing short of pure innovation.

The Stutem 2017 Report adjudged Covenant University the # 1 University with the most employable graduates in Nigeria. The report of exploits of graduates of this university lends credence to the school's approach to learning which enriches the students' overall experience. I encourage you to find some time to read Kemi Onabanjo's story. As many of you already know, she emerged the best in her class when she graduated from this university. In 2016, she was the Valedictorian speaker at INSEAD MBA. Her story is one of many other success stories of young men and women who learned vision and passion from this citadel and will not be held back by any circumstances.

Covenant University was also adjudged the #1 World Research University by Elsevier SciVal (2011-2015 report) in categories such as Wind Power, Wind and Turbines as well as Corrosion, Corrosion Inhibitors and Carbon Steel. This points to the emphasis on research and the pride of place it occupies within this institution.

Today, Covenant University features prominently in several global ranking of tertiary institutions. Lecturers of this citadel have also received recognitions and ranked top among their peers from across the globe. This is indeed heartwarming, especially in this period of obvious decadence in several spheres of the society. Covenant University has become a national pride, and a clear attestation to what the fusion of vision and exemplary leadership can achieve. I want to thank Dr. David Oyedepo – the Chairman, Board of Regents and Chancellor, for his vision, and also encourage the Management, Staff and Students to continue in this culture of excellence.

INTRODUCTION

This year's Convocation Lecture aptly titled "Technological Disruption and Tertiary Education: Redefining Learning for the Future", provides a momentous opportunity for me to share my thoughts on how learning can be redefined in the era of rapid technological disruption.

The focus of this year's Convocation Lecture is a clarion call on us to redefine tertiary education learning in readiness for a future that will be predominantly driven by ever evolving technological disruption. In this lecture, I will provoke a conversation on the topic, and share some personal perspectives and experiences with the firm belief that the "Eagles" being released will learn a thing or two as they journey into the real world.

Exactly thirty (30) years ago (1988), I graduated from Obafemi Awolowo University (OAU) Ile-Ife, earning a degree in Economics. During our convocation ceremony and convocation lecture back then, the much we had was video coverage which perhaps was made into tapes; and I doubt if copies of those tapes can be found anywhere today. And even if, by any miracle, a copy or two were preserved, I am almost 100 percent certain that there will be no video player that can play them. The video tapes of 30 years ago, as we knew them, have gone completely extinct. But that is not to say that we may not find a handful of them in the best preserved archives and museums around the country or outside the country.

Today, as we are seated here and as I am making this presentation, people in faraway locations across the globe can tune in real time via YouTube and Facebook Live Streaming and watch proceedings of this ceremony, and interact with us if they so wish. As at 1988 when I graduated, YouTube and Facebook were not in existence, having been created in 2005 and 2004 respectively. Humanity has moved beyond terrestrial satellite television to real time web interaction enabled by ubiquitous internet connectivity. Between 1988 and now, technological disruptions have placed at our disposal enormous tools and resources that no one could have imagined possible few decades earlier.

In the same manner, teaching and learning have moved beyond the physical classroom space to the digital world. So much so that you are not limited to what your lecturers teach you in class. Students now have access to teaching and learning materials from the top ranking institutions across the globe, essentially placing you at par with students in the most advanced economies of the world. This is simply an awesome opportunity because you are going to be competing with these same people in the global job market as you step out of this institution. You are going to be competing with them for placement for higher degrees, for those of you that will proceed to study further.

I will now proceed to present an overview of tertiary education; examine some national and global educational indicators and statistics; and attempt a discourse on how technological innovation is changing our world. The lecture will also explore the impact of technological disruption on tertiary education; and also ask if we are ready for the future of higher education, and then I will conclude with some closing remarks.

TERTIARY EDUCATION: AN OVERVIEW

Tertiary education is the third level of education, deriving its meaning from the Latin origins of the words *tertius* or *tertiarius*. The concept of tertiary education presupposes that there is a primary and a secondary level which are essentially the building blocks for tertiary education. These levels are rendered in the following order: primary, secondary and tertiary. Another way to put this order is basic, intermediate and advanced. This understanding is key in helping us to determine the place of tertiary education in the overall scheme of learning and education. Higher Education is a term often used interchangeably with Tertiary Education to represent the learning institutions that come after secondary education. These institutions include universities, polytechnics, colleges and institutes (this list is not exhaustive). They are normally created and organized based on a country's educational tradition or needs. This point is important because tertiary education ideally, should be solution focused and problem solving, and tailored to address the specific need and skills gap of the different countries or societies where they are sited.

Tertiary Education in Nigeria

The tertiary educational system in Nigeria has been largely structured according to the Western model of higher education drawing in a great deal from the British-American tradition. Policy makers have sought to make the system global in outlook while domesticating aspects of the system to enable it address local needs.

As enunciated in Nigeria's National Policy on Education, tertiary education seeks to: contribute to national development through high-level manpower training; develop and inculcate proper values for the survival of the individual and society; develop the intellectual capability of individuals to understand and appreciate their local and external environments; acquire both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society; promote and encourage scholarship and community service; forge and cement national unity; and promote national and international understanding and interaction. The policy also provides that these goals are to be achieved through teaching, research and development, staff development, generation and dissemination of knowledge, students' industrial work experience schemes; amongst others.

Extant regulations in Nigeria and many other jurisdictions permit both public and private ownership within the tertiary education space. As a result, in Nigeria, tertiary institutions can be established by federal and state governments as well as individuals and organizations. This arrangement presents a massive opportunity for knowledge generation, skills development and problem-solving opportunities for diverse segments of the society. State governments for instance can set up Colleges of Education to address shortage of science teachers, provided that the relevant science faculties and resources are in place; just as technological institutes are established with a specific mandate to train engineers and technologists – to create a pool of skilled personnel required to drive growth in critical industries.

Generally, societies rely on the tertiary education system to form the base for learning, research, innovation, overall socioeconomic development and progress. They generate smart solutions that improve quality of life and expand the horizons of knowledge. Societies that have developed tertiary institutions and continually access the tangible and intangible outputs from these institutions are better positioned to fulfill the aspirations of their population. It is this understanding that prompts the Federal Ministry of Education to envision its Tertiary Education department "to advance Nigeria's economic growth and global competitiveness through the provision of accessible, relevant, high quality education in our tertiary education institutions".

Nigerian Educational System and Global Competitiveness

The general consensus is that there is a massive gap between the vision for the educational system as outlined above and the current reality. A cursory review of the Global Competiveness Report (2017-2018) will lend credence to this sentiment. Nigeria currently ranks 125th on the Global Competitiveness Index. On the

considerations of technological readiness (114th) and higher education and training (116th), the country maintains an average rank of 115th. The report shows a direct link between technological readiness and the maturity of the higher education system. And these two indicators have significant impact on overall competitiveness of many countries. Let us take a look at three more examples from sub-Saharan Africa (selected countries are from West Africa and Central Africa). The average rank for the two indicators and the overall competitiveness rank for Ghana is 96th and 111th, respectively. Cameroon ranks 113th and 116th, respectively, while Senegal ranks 103rd and 106th, respectively, demonstrating how closely knit these indicators are. In a nutshell, a country that is technologically ready will also display significant maturity in its educational system, and therefore, rank better than their peers in overall global competitiveness.

HOW TECHNOLOGICAL INNOVATION IS CHANGING OUR WORLD

The story of human progress is possible because of technological innovation. The concept of technological innovation embraces products, services and solutions that seek to address the challenges of everyday life in new, hitherto unimaginable ways. The concept speaks to and challenges our instinct to solve human problems using fresh and smarter technological methods.

It does not really matter whether technological innovation occurs in complex products and processes or in simple solutions; what matters is that technological innovation adds value to an economy and improves overall quality of life. Complex technological innovations correspond to what many experts call system innovation due in part to the enormity of resources required through the conception, development and deployment of the service. Technological innovations in health, transport or communication systems are generally complex. Other technological innovations are in the form of simple solutions for low-income communities. 'High-tech' may not be an expression that we will associate with such solutions; but they are impactful and life-changing all the same. A review of few examples will demonstrate how technological innovation is changing our world.

Technological Innovation in Agriculture

Technological innovation is impacting crop production through the deployment of agricultural drones equipped with cameras and sensors to monitor crops growing on the field. They help farmers gather information on crop yield, general crop health and pest activity. The data gathered are used to determine the type of intervention required to improve crop yield. Information on critical farm infrastructure like storage and irrigation systems can also be accessed. Agricultural drones have radically changed the way farmers inspect and monitor extensive farm areas in terms of the number of personnel employed, time expended, quality of data obtained and the output and productivity. Generally, this translates into improved income levels for farmers and guarantees maximum contribution of crop production to sustainable economic development.

Technological Innovation in Medicine

Medical practice is another area where technological innovation is changing our world tremendously. For example, bio-medical engineers engage with relevant stakeholders to develop solutions that have revolutionized medical procedures. Capsule endoscopy has caught on as a smart way to investigate a patient's digestive tract for such conditions as gastric ulcer and acid reflux. The device is also better adapted for colonoscopy than the regular endoscope machine. The capsule is fitted with a miniature camera, a light bulb, a radio transmitter and powered by a battery. Photographs taken after the capsule travels down the patient's digestive tract are transmitted to a receiver and eventually downloaded to a computer for analysis. This technology is revolutionizing medical investigations and diagnosis and making treatment for even the most complex health conditions less invasive and risky.

Technological Innovation in Banking

Technological innovation has greatly changed the way we carry out financial services. A number of technologies have come together to make delivery of banking services possible with or without access to a physical bank branch. Using a network of web, mobile, ATM, SMS and email services, bank customers are now able to access almost all banking services without recourse to a brick and mortar branch. What banks have done is to develop robust virtual banking suites to exist alongside their physical branch locations. Many young and tech-savvy people share with me how much they love the in-branch experience at the bank where I currently lead a team. But they indicate that they have become drawn to the convenience, security and speed that the Bank's virtual banking platforms provide. Some of them even mentioned that they cannot recall the last

time they visited a bank branch to carry out a transaction.

Technological Innovation in Commerce

In much the same way that technological innovation has changed banking, it has impacted commercial activities by giving birth to electronic commerce (e-commerce). In my view, e-commerce is perhaps the most telling development to have happened within the buying and selling landscape after the introduction of money which dislodged trade by barter. E-commerce platforms are bringing buyers and sellers of goods and services together, breaking language and distance barriers using the internet. A researcher can buy books, a university can pay for a video conference subscription and a student can pay his fees conveniently online, all thanks to e-commerce. The integration of platforms that enable the buyers to receive the products or services they ordered for; while also ensuring that the sellers or service providers get paid for their products or services may be a little complex sometimes but the harmony is just beautiful to consider. E-commerce has revolutionized the culture of buying and selling and created a whole new and ever expanding virtual market place.

Technology Innovation and the Problem-Solving Mindset

Technology innovation is all about finding new, cheaper, more convenient solutions to everyday problems. The tertiary education you have acquired in Covenant University has primed you to solve real life problems, improve processes and enhance productivity. The world is not expecting you to come out from here and settle into the status quo – continuing to do things the way they are 'traditionally' done. The world is expecting you to bring forth innovation. So please, challenge the existing order. Be continuously curious and seek better ways of doing things. One of the greatest gifts God has given to us is the gift of creativity, which is the ability to bring to mind what is presently not in existence. Be inquisitive and seek better ways to get things done. As some would say, always think outside the box. Or even better, think like there is no box!

The major breakthroughs in technological innovation today are mostly driven by young people like you. In Uganda for example, a twenty-four (24) year old – Brian Gitta developed an award winning device that detects telltale signs of malaria by simply shining a red beam of light on the patient's finger. How did Brian Gitta achieve this feat? He had a problem – conventional blood tests failed to diagnose his own malaria. Rather than despair and blame whoever for his "misfortune", Brian Gitta's creative instinct kicked in. He began to ask questions – "Why can't we find a new way of using the skills we have found in computer science, to diagnose a disease without having to prick the patient?" Today, Brian Gitta has invented a low cost, reusable device for the diagnosis of malaria that is non-invasive, and does not require specialist training. At age 24, Brian Gitta, has won the Royal Academy of Engineering's Africa Prize. This is the sort of mindset that the world needs, a problem solving mindset. See challenges as opportunities for innovation. So, I would encourage you to develop similar attitude as you step out into the world.

IMPACT OF TECHNOLOGICAL DISRUPTION ON TERTIARY EDUCATION

Understanding Technological Disruption: Technological innovation should be understood as a prerequisite for technological disruption. Technological disruption takes place when innovation brings about simpler and cost-effective products and services that draw the patronage of a major portion of the market. Often, it usually leaves the existing market leader in a much less profitable situation. It brings new players into the market and displaces existing players that are unwilling to innovate. Ask the once famous Encyclopedia Britannica. You can also ask several moribund postal services across the world, including our own NIPOST. Who can remember the dominance of Nokia in mobile telephone technology? Nokia's inability to innovate and move from keypad to touchscreen technology led to enormous loss of market share to Apple and Samsung in the mobile telephone space.

Technological Disruption and Competition in Tertiary Institutions: Technological disruption is compelling tertiary institutions to innovate more to remain competitive in order to attract student patronage. Technological disruption here is best seen from the innovative approaches that go into making the teaching and learning experience more seamless, effective and convenient for all the concerned parties – administrators, teachers, researchers and learners. Different tools and strategies are being created to significantly improve these processes. Older tools and strategies are being discarded for smarter ones. Tertiary institutions are making efforts with an array of service orientation which is prompting institutions to approach students as customers who are paying for a service. If I am a vendor providing a service, a customer may choose to patronize another vendor if my service is not worth the cost he/she will incur. This understanding will compel me to deploy all the tools I require to deliver the best level of service possible, to keep me ahead of competitors and make my brand the first choice for potential customers. Thus, technological disruption becomes a competitive advantage.

Today, however, it appears that the only class of tertiary institutions that are concerned about competitiveness are the private universities and institutions. The government owned tertiary institutions are still almost completely off the radar as far as competing for students is concerned. Why is this so? According to the Executive Secretary of the National Universities Commission, Rasheed Abubakar during a Senate public hearing held on Tuesday October 24, 2017, only about 30 percent of the average 1.7 million UTME candidates are able to secure admission into Nigerian tertiary institutions annually. Consequently, they have to motivation to innovate and be efficient. In the future, as the socioeconomic wellbeing of Nigerians improve, public universities will have no alternative but innovate to remain competitive and continue to attract studentship.

Technological Disruption and Internationalization: Technological Disruption and Internationalization of tertiary education has become one of the major trends in the development of higher education in recent years. Tertiary institutions around the world are increasing their internationalization efforts in the recruitment of students from around the world. Many programmes are being implemented to make higher institutions possess an international or intercultural outlook. This is the major focus of internationalization efforts by most institutions – to maintain global appeal while remaining locally relevant. There is a plethora of strategies like faculty and student exchange programmes, branch campuses and franchises, international partnerships as well as deliberate promotion of international cultures, values and trends.

Technological disruption have been deployed to strengthen internationalization efforts. This is done by mobilizing the technological resources available to the institution like robust email systems, user friendly websites, active blog and chatrooms as well as telephone and videoconferencing facilities. It is heartwarming that Covenant University is one of the foremost universities in Nigeria implementing this effort in creative and impactful ways. I visited the International Office and Linkages portal on the University website and I was greatly impressed. It has detailed sections on admission for international students, immigration information, general information on life in the University and testimonials.

Exploring the power of the internet and communication

technology is critical to the use of technology to advance internationalization efforts. Online teaching and learning as well as collaboration with international partners is facilitated through the use of electronic conferencing. The Teleconference Centre set up by the University is a welcome development in this regard.

Technological Disruption, Teaching, Learning and Research: Technological disruption will have an impact on teaching, learning and research by making positive changes to educational content, delivery methods, student experience and programme quality. What are the practical ways that technological disruption is impacting the learning process in tertiary institutions?

(a.) Massive Open Online Courses (MOOCs) and distant learning programmes are helping to reduce the cost of tertiary education for many people. Well-adapted web applications and internet resources are entrenching online as a favourite learning delivery platform. With qualitative content, the right partnership and good organization, MOOCs have become the tool of choice at higher education level for many people. What the experience with MOOCs has shown is that technological disruption ushers in alternatives to the regular campus and classroom learning experience as we know it. A parallel that comes to mind is the idea of commercial banks setting up electronic banking suites that allow customers to access pretty much the same services available at a local branch office.

Virtual learning: Virtual learning is a set of **(b.)** teaching and learning tools designed to enhance a student's learning experience using computers and the internet. Virtual learning experience allows students to access their courses at their convenience and affords them flexibility as their courses can be accessed at their own pace and as often as is convenient for them. Virtual learning could be computerbased or internet-based. It minimizes or completely eliminates the need for teachers and students interface in a conventional physical classroom. Although classroom lectures offer a unique opportunity for further investigation and exchange of views and ideas, it would have been an amazing experience for me if my undergraduate training was conducted using virtual learning techniques. Virtual learning would have enhanced the student experience I had during my undergraduate days, relieving me of the burden of trying to bring my course notes up to date when it was most inconveniencing.

Non-conventional education providers: Additionally, technological disruption in the higher education space implies that non-conventional education providers will

emerge. Some MOOCs are owned by established higher institutions while others are based on collaboration between employers and higher institutions. While most of them are for profit, a few are not for profit. Several academies are joining the fray, along with companies that were previously producing online degree programs for universities. I will call these non-conventional education providers Edutechs. Just like Fintechs are disrupting the financial services space and giving traditional banking institutions a serious run on competition. It is also similar to UBER who though not in the transport sector, have used technology to revolutionized the sector. Edutechs will compete with educational institutions in the future.

(c.) E-libraries: One of the biggest gamechangers in the educational system has been the move from the manual process of borrowing a book in the library to a digitized process. I still recall my years as an undergraduate and the enormous changes that have occurred, transforming those gigantic edifices we had on our campuses to just your mobile phone. Borrowing a book entailed visiting the school library and taking some time to search through several book shelves to locate the intended book. My job was made more difficult if less careful or a mischievous students had searched for a book before me. Imagine the time we dissipated in going to the library, locating the section and indexes of the materials we needed. One cannot help but wonder how we survived those days!

Sometimes students journeyed to other institutions to access books and periodicals, especially when they are writing their final year projects. Today, just on your palm, with your mobile phones, tablet devices and personal computers, you have access to up to date collection of books and materials from the best libraries in the world. Thirty years ago, libraries contained several hundreds of books and other materials. Today, with a 64 Gigabyte flash drive, you can carry with you several thousands of e-books. Similarly, lecturers now have access to the best teaching materials from across the globe. Essentially therefore, you do not have any reason not to excel beyond expectation!

The solution provided by the Covenant University Centre for Learning Resources Web Public Access Catalogue (CLR WEBPAC) is a good example of innovation. This solution allows users to quickly access the items on the catalogue from the comfort of their locations on campus. They can monitor the charging and discharging of items on the catalogue and book items online. I understand that this solution helps the university community to do much more than I have just enumerated. Technological disruption and tertiary education: Redefining Learning for the future

Research: This is the main reason for the (**d**.) existence of tertiary institutions like universities. Whether it be pushing the frontiers of knowledge or finding solutions to the challenges confronting communities and humanity, tertiary institutions can deploy technology to facilitate and enhance the research process. The internet has eased the process of literature review for researchers to identify existing gaps that their research efforts could fill. Technological innovation has also afforded researchers access to up to date publications and journal articles from around the world. It has also enabled the hosting of databanks and storage of secondary data in retrievable formats. The findings of researchers are also published on the internet and can be accessed from anywhere.

Teleconferencing facilities are also being used to conduct research interviews and focus group discussions to elicit responses from respondents especially where financial resources, distance or security concerns may be constraints preventing the researcher from being physically on the ground. Teleconferencing is also being used to facilitate joint research when researchers are collaborating across international or intercontinental boundaries. Technological innovations have enriched the research process and increased efficiency in the use of resources.

Technological Disruption and Administration: Many of the older folks here may have intriguing stories about their experience with course registration some forty, thirty, twenty or maybe ten years ago. Course registration was a nightmare for the first three or four weeks in a new session when students lined up to sign manual course registration forms. Indeed, some institutions may still have challenges with student and course registrations. This need not be the case at a time when web applications are easy to build and can be adapted to manage enrolment processes and administration of student profiles. Today, web applications are adapted for:

- ✓ Course registration;
- ✓ Results management;
- ✓ Lecture timetable scheduling;
- \checkmark Information dissemination; and
- ✓ Students performance tracking

It is the aggregate of these innovative efforts that define student experience and facilitate the learning process within an institution.

Technological Disruption and Potential Risks?

Technological innovations are not without downsides. One of the major challenges of technological innovations Technological disruption and tertiary education: Redefining Learning for the future

and the concomitant disruptions is the potential to upend labour markets and possibility of loss of jobs as automation substitute for human labour. Tertiary education will not be an exception. As advances in artificial intelligence and machine learning rev up, there is high possibility that the need for human interface in the learning process, including testing and grading will reduce. Already here in Nigeria, the Joint Admission and Matriculation Board (JAMB) has introduced Computer Based Testing which has essentially eliminated human input in marking and grading. While this sort of computer based testing is currently being applied to only multiple choice question type of examination, in a short while, computers will be able to assess and grade student's essay type examination.

What does this portend for lecturers and the teaching profession? Your guess is as good as mine. The upside for humans has been that for now, machines lack intuition, imagination and creativity which are still indispensable. Humans however are not able to perform certain tasks as machines do with precision and dexterity. In a standardised teaching and learning process as we currently have, the continued need for overwhelming human presence and interfaced will likely diminish over time. While I would not want to sound alarmist, we should begin to think seriously of how to collaborate better with machines for enhanced teaching and learning experience.

THE FUTURE OF HIGHER EDUCATION: ARE WE READY?

There is no doubt that disruptive technologies are becoming the new normal in the way we live our daily lives. I am convinced that this trend will continue to greatly impact and disrupt the learning process in tertiary institutions. What we ought to do is to deeply understand the issues driving innovation and disruption. It will bring us joy and fulfilment when we are in the category of disruptors rather than those being disrupted. I will enumerate a few of the trends that will redefine learning for the future.

Personalised and Customized Educational Model: Personalized education will see greater investment in the future as higher institutions improve their service culture. The need to attract and retain students will make institutions implement solutions that will enhance student experience. This trend will be greatly supported by massive levels of data availability and the attendant innovative learning processes. The end-product is the design of tailor-made education programs that address the needs of the individual student. Such programs are successfully delivered through a mix of conventional tertiary education methods and digital/virtual learning technologies. **Solution-Specific Educational Model:** The educational system of the future will remain increasingly focused on solving the peculiar national or societal problems in the locations where they are sited. A good example is how the nation of Israel has used its educational system to tackle its peculiar challenges.

Many people wonder how a country as small as Israel, with all the odds against it, manages to produce more start-ups per capita than any other country in the world. Dan Senor and Paul Singer tell Israel's story of innovation in their book Start-Up Nation and attempt to provide answers that will be instructive to all of us who are stakeholders in the tertiary education sector and are gathered here today. Israel's high-tech economy greatly impacts its higher education system. Tech companies design products to facilitate learning in higher institutions while higher institutions groom talent to feed the tech economy. The interdependence between the tech economy and higher institutions has great benefits for the nation. For Israel, higher education is not complete without an experience with solving life problems. One would have to go to two places for this experience: the Israeli Defence Forces (IDF) and a tech start-up or venture.

In Israel, military service is understood as an

unofficial aspect of post-secondary education. As young people come out of secondary school, they are conscripted into the military. Training in combat, decision-making and problem-solving will be combined for two to three years after which most military graduates enroll at a university. This interdependence and the need to solve battle field problems will be further demonstrated when the Israeli military collaborated with Hebrew University in Jerusalem to set up an elite military program called the tapiot. The program allowed young people enlisted to get an accelerated degree in Mathematics or Physics while it exposed them to the various branches of the military and their specific needs. The graduates from this program have become Israel's top academics and founders of its most successful companies. Furthermore, most of Israel's start-ups were either founded or managed by people who had distinguished themselves in its military.

Beyond this collaboration with the military, Hebrew University also set up a technology transfer company just as other higher institutions in Israel. These institutions received research and development funding provided by the Israeli government in their early days. Today, they record billions of dollars annually as turnover.

The modern economy in which we find ourselves is placing a great deal of demand on our higher institutions to produce graduates who have a global outlook while Technological disruption and tertiary education: Redefining Learning for the future

demonstrating a strong understanding of local needs and challenges.

Artificial Intelligence: This is the simulation of human intelligence, behaviour and decision-making process by computers and other smart devices. Artificial intelligence is a reality that has taken hold in some spheres already. For instance, artificial intelligence driven chat bots are replacing humans in online and real time enquiries in banks and other service industries. In the near future, computers will not only be able to acquire information about a student's course work and behavioural patterns, but will be able to analyse the information and suggest or create customized learning solutions that will address the peculiar needs of each student. This technology is a key component of the set of innovations that will drive personalized learning in the future.

Educational Software Solutions Providers: Just as Fintechs have revolutionized and upended the financial services industry, so are Educational Software Solution Providers redefining the future of Tertiary Education. Fintechs are now looking to move beyond niche markets to offer adjacent services and in cases full stack banking solutions.

MIB Technology, a tech company in KwaZulu Natal Province in South Africa, designed a portal that allows students access to textbooks in the form of e-books. The portal hosts a digital library containing videos, books, interactive apps, past examination papers, Wikipedia, content from TED talks, National Geographic and others. The content can be accessed using a wifi hotspot covering the school community. Teachers and students are able to share information, calendars, assignments and link to lessons on a teacher-to-teacher, teacher-to-student or student-to-student basis.

This company installs all the infrastructure required while the school only pays a nominal licensing fee. The portal uses technology that digitizes and compresses content in such a way that dependence on internet connectivity is reduced. Content can also be accessed offline. To ensure that that the solution is sustainable, the company trains members of the school community on how to provide support to the users. I can imagine how many of us are already thinking about how we can adapt this type of technology to facilitate and enrich the learning process for our higher institutions.

Inter-Institutional Collaborations: Collaboration between higher institutions and Massive Open Online Course (MOOC) platforms to deliver education will increase. The collaboration, in some ways, appears to be the response of conventional higher institutions to the disruption that is to come. There is no doubt that the MOOC platforms need partnerships to be able to garner credibility as the names of the partnering institutions appear on the certificates issued to students who successfully complete their programs.

Now, let us look at some examples of such growing partnerships among global institutions.

Coursera is a foremost US-based MOOC platform which has 167 partners most of which are universities. Coursera currently ranks among the top MOOCs in the world. Coursera was founded in 2012 by Andrew Ng and Daphne Coller who were both computer science Professors at Stanford University at the time. How they transited from offering their courses online to building a business with 167 partners spread around the world is a remarkable story.

Here in Nigeria, we are already seeing the entrants of local entrepreneurs who are taking advantage of their understanding of the local higher education terrain. The duo of Kunmi Demuren and Bunmi Akinyemiju founded Edutech through their venture capital firm in 2012 and started with building portals for some universities in Nigeria. Edutech desires to help traditional universities in Africa take their oncampus degree programs online through the implementation of the very best of technology. Currently it has 9 programs deployed on the platform, with more than 16,000 enrolments. While many universities in Nigeria are still managing their own e-learning platforms, the expectation is that there will be more platforms within the local space seeking to employ the model used by Coursera and Edutech. Our higher institutions should have in-house teams who can study these models and adapt them to deliver innovative learning solutions for now and the future.

Inter-institutional partnerships will drive tomorrow's educational model and help all parties achieve a win-win in increasing their spheres of influence and driving their overall objectives.

Leveraging the Power of Mobile Devices: I know in my heart that smart phones mobile devices and tablets, will have greater place in the learning process of the future. Smart phones are ubiquitous in our lives, impacting the way we communicate, access entertainment and carry out banking activities. It has equally changed the way we receive information and access the internet. This piece of technology along with less common ones like augmented reality and virtual reality devices have a role to play in enriching the learning experience at the tertiary education level, now and in the future.

Tackling the pushbacks: As we prepare for this future, it is important that we remain focused on addressing those challenges that have kept the tertiary education sector in Nigeria greatly behind the global technological innovation curve. It is true that we have a challenge with some critical infrastructure like broadband Technological disruption and tertiary education: Redefining Learning for the future

access and power. There are also issues with organization and funding of research and development ventures. These challenges make the task of innovation daunting. However, the opportunity for incremental progress is abundant. We must embrace the challenge at individual and institutional levels. We will need the collaboration between the private sector, government and tertiary institutions. We have the opportunity to simply adapt and leverage available technologies to enhance our capacity to provide services that have great impact on the learning process.

SOME PERSONAL REFLECTIONS

I have reflected deeply on today's event and what I could say that will help you to avoid some pitfalls in your career path, drawing from my experience and perspectives, and the experiences of others that I know.

Responsible Use of Social Media

Technological disruptions have provided us with fantastic digital tools for enhanced productivity. However, if you do not exercise caution and restraint, digital tools could become a serious source of distraction from the real world that we live in. Let me spend a few moments to talk about social media and its impact on the younger generation. While the responsible use of social media may have some upsides and could be desirable to stay in touch with friends and family and engage in meaningful local and national conversations, I would urge you to exercise utmost restraint in the usage of social media platforms. Social media has become a source of unnecessary anxiety for people who see and follow the carefully curated pictures and stories of their friends on Instagram, Facebook, Snap Chat, and they begin to despair because they think that their friends are living a more fabulous life than they are.

I will therefore urge you to please live in the real world. When you achieve feats and milestones as you have been primed to achieve and as you are expected to, please celebrate those achievements in real life and not on social media. When you have testimonies to share, please share them in your churches and not on social media. As much as possible, live in the real world and not the social media world.

Finding Your Element

Finding your Element is a concept popularised by Sir Ken Robinson – a renowned educationist and reformer. According to Sir Robinson, The Element is where natural aptitude meets personal passion – doing something for which you have a natural feel. The first and most important step to finding your element is an understanding of your own aptitudes. When you are in your element, you will love what you do and you will essentially will be having the fun of your life in the process. As Confucius stated, "Choose a job you love, and you will never have to work a day in your life."

So many people studied and qualified for disciplines prescribed by others, which sometimes is the recipe for an unfulfilled career. Yes we need Medical Doctors, Engineers, Lawyers and Computer Scientists. But we also need people to make our clothes. The world need Psychologists, Botanists, Agricultural Scientists, and Biologists. Wangari Maathai – the late Kenyan Nobel Peace Prize Laureate majored in Biology. She went on in life to found the Green Belt Movement, an environmental non-governmental organization focused on the planting of trees and environmental conservation. She made her mark in the world by being a great crusader for our environment. She was simply planting trees!

In life, wherever you find yourself, make the most of the opportunities and do your utmost best at it. As Martin Luther King Jr. said, "If a man is called to be a street sweeper, he should sweep streets even as a Michaelangelo painted, or Beethoven composed music or Shakespeare wrote poetry. He should sweep streets so well that all the hosts of heaven and earth will pause to say, here lived a great street sweeper who did his job well."

CONCLUSION AND CLOSING REMARKS

As I conclude, let me pause to ask our "Eagles" what are your vision in life? What are your dreams in life? Everyone has a dream. What is yours? What do you want for yourself in this life? How would you love to be remembered? Every single achievement starts with a clear vision. This great citadel is the vision of our amiable Dr. David Oyedepo. Zenith Bank is the vision of Jim Ovia, Apple is the vision of Steve Jobs and two other friends, Bill Gates and Paul Allen's vision produced Microsoft. Uber was the vision of Travis Kalanick and Garreth Camp. The importance of vision in your life cannot be overemphasized. Vision will keep you on track and focused because you know exactly where you are headed and how you plan to get there. Vision will make you persevere in the face of the vagaries of life.

At age fifteen I decided that I wanted to be a banker. That was my career vision and looking back, I am grateful I took that decision early enough. After the mandatory National Youth Service, my peers raced straight into the labour market; but I decided to go back to school and study for a Master's Degree. The decision to resist the allure of getting a job, earning money and settling down in life was not an easy one – it entailed numerous tradeoffs and opportunity costs. I decided from the outset that for me to be a successful banker and distinguish myself, I need a higher degree and I was not going to be deterred by challenges. Achieving your goals in life requires sacrifice, commitment, perseverance and determination.

I earned my Master's Degree in Economics from Obafemi Awolowo University in 1991, and was primed for the labour market. At this time, some of my peers already had jobs while some were still job hunting. Looking back to 1991 and comparing that era to the present day, not very much has changed in terms of outlook for the Nigerian economy and employment opportunities. In point of fact, 1991 seem worse because Nigeria was under military rule. The country was essentially a pariah state, internationally alienated, and with scant economic opportunities. The future could only be described as bleak. For nine months, I crisscrossed the entire Lagos submitting my resume and scouting for job openings. It does not need to be emphasised that internet was not available for online job applications. There was no Jobberman and other online recruitment portals. Can you imagine that there was no internet in Nigeria in 1991? There were no mobile phones, no tablets. Only elites had land line telephones and post office mail boxes which was highly inefficient and grossly unavailable.

For months that seemed like eternity, I did not receive a single invitation for a job interview. But I kept hope alive and prepared myself to take the opportunity when it finally comes. And it did come eventually in September 1991 when I was called for interview and subsequently employed by FBN (Merchant Bankers) Limited. I took my chances, I left FBN

in 1997 to join Zenith Bank where I have been since then and risen to become an Executive Director. The essence of this narrative is simply to drive home the importance of vision and diligence. From the outset, I had a vision of my career and I stayed with it. Stay focused.

As "Eagles", constantly seek to reinvent yourself and renew your strengths. We may be familiar with the story of how the Eagle renews its strength. It is important to tell the story yet again and I crave your indulgence to do so because of its relevance. The story goes thus: The Eagle has the longest life-span of its species and can live up to 70 years. But to reach this age however, the Eagle has to make some tough decisions. About its 40th year, it's long and flexible talons can no longer grab preys, which serves as food. Its long and sharp beak becomes bent. Its old-aged and heavy wings, due to their thick feathers, become stuck to its chest and make it difficult to fly.

Then, the Eagle is left with only two options: die or go through the painful process of change which lasts 150 days. The process requires that the Eagle fly to a mountaintop and sit on its nest. There the Eagle knocks its beak against a rock until it plucks it out. After plucking it out, the Eagle will wait for a new beak to grow back and then it will pluck out its talons. When its new talons grow back, the Eagle starts plucking its old-aged feathers. And after five months, the Technological disruption and tertiary education: Redefining Learning for the future

Eagle takes its famous flight of rebirth and lives for 30 more years.

Why is the story of the Eagle's rebirth important? As you are released as "Eagles" into the real world, you will need to constantly renew your strengths to survive and thrive. Do not be stuck in the past because the world is rapidly changing. Expand your knowledge frontier. Study and do not say 'there is no time'. God told Joshua to study the book of the law and meditate on it day and night so that he will prosper and be successful. I will leave you with the same advice – study continue to reinvent yourselves, and renew your strengths to thrive in a dynamic world.

The transformation the world is undergoing promises to be unlike anything humankind has ever experienced. Technological disruption is upending almost every industry in all countries, transforming entire systems of production, management, governance, and learning. While we cannot fully discern the full ramifications of the technological disruptions at this nascent stage, you have received education for the future without any clue or idea of what the future will look like. This is the challenge you will face.

Notwithstanding all the challenges the world is grappling with presently, I want you to know that you are stepping into the best time in human history. Today, our civilization is at crossroads, having reached a unique moment in history. We are at the cusp of major shifts that are altering and redefining the way we live, learn, work, and relate with one another. The changes we are experiencing are of monumental proportion, and are driven by technological disruptions, especially the convergence of the physical environment and digital space.

We are now in the era of ubiquitous connectivity, virtual reality, artificial intelligence, robotics, and cloud computing, which are combining to enable the "internet of things". The new age we are living in is typified by the speed of technological breakthroughs, the pervasiveness of scope and the tremendous impact of new systems. This is era of the Fourth Industrial Revolution, aptly described by Professor Klaus Schwab, Founder and Executive Chairman of the World Economic Forum.

This is the world you are stepping into and will be living in. You are expected to be active participants in the disruption process and reap the benefits; you are not expected to end up as mere consumers or spectators. Whole new industries are emerging to offer products and services that will increase human efficiency and enhance human wellbeing. In the emerging new order, the opportunities are limitless; and enormous wealth will be created for those who will ride the new waves. I have no doubt whatsoever in my mind that Covenant University has prepared you adequately to thrive. As you step out today, imbibe the attributes of the Eagle.

Eagles Have Vision – Have a clear vision and be focused on your vision.

Eagles Embrace Storm – Embrace challenges because they are necessary to lift you to greater heights.

Eagles Flock Together – Choose your company carefully.

Eagles Renew Their Strength – Constantly reinvent yourself to be relevant.

Eagles Fly at High Altitudes – Aim for the top, do not settle for little things.

Spread your Wings and Soar – like the Eagles that you are!

Congratulations and God Bless You!

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