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EMERGING TECHNOLOGIES AND THEIR IMPLICATIONS ON THE FUTURE OF BUSINESS EDUCATION

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ABSTRACT

The aim of this study was to examine emerging technologies and their implications on the future of Business education. Business Education has to follow the current trend in order to be relevant and grow with the competitive world of business. Emerging technologies have changed and reshaped the trajectory of teaching and learning which must be aligned with the current curriculum in Business education programme. The study x-rayed emerging technologies, Business education and the challenge of emerging technologies, emerging technologies and its implications on Business education curriculum and importance of emerging technologies to business education. The researcher drew conclusion on the fact that emerging technologies in the educational sector have really improved teaching and learning in schools. This can only be achieved when the use of these technologies are positively utilized in the right direction and if not properly used, it could be dangerous and enslave the users. It recommended among others that training and retraining of business educators should be a priority so as to update them with the new technologies available, and that Business educators should pick up the challenge, develop their skills in order to impact their students with current or emerging skills, Knowledge and altitudes to live and work in technologically dynamic society.

***Key words:** Emerging Technologies, Future of Business Education, Implications.*

1. INTRODUCTION

Emerging technologies are considered as important tools for improvement in teaching and learning of Business Education in Nigeria today. This is because, they would help in accessing expansion to education, bring out the relevance of the programme, increase digitalization of educational quality and make teaching and learning more active when effectively and efficiently used. The advent of new technologies in Nigeria has helped in preparing business education students to avail themselves of these facilities that influence faster learning and easy access to information for better knowledge and skill acquisition. Therefore there must be a comprehensive approach to these technologies and educational programmes in cognizance with the technologies, instructive approaches, and students' assessment (via assignments, tests and examinations) for both teachers and students. It

means that more attention should be paid to practicals in the use of these technologies in order to achieve the objectives of the programme.

The technologies offer the students and teachers the opportunity to be skillful, knowledgeable in ICTs, writing, reading and arithmetically sound in this modern world. Information and communication Technology (ICT) has increasingly developed over the years. This has touched almost all aspects of human lives and has equally changed the way people communicate, learn, teach, work and socialize. Education and new technologies play a vital role in ensuring that most people especially business educators join in reaping the benefits of the technology–rich world in order to overcome some of the risks and difficulties people faced in the past.

Technology to a large extent has played very vita role in advancing the course of society. Not only has technology altered hitherto, the processes through which the society operates, be it in the field of commerce, health, communication, transport, banking, clientele service, etc. Modern technology has revamped these processes, and consequently birthed a compelling need to rejig and fetch out ways through which the society can attune Itself to the demands of emerging technologies. Education which is the pivot around which knowledge for man's development it I advanced, has proved to be a veritable tool that had assisted the society to transit from one level of development to another, Ogbonaya (2020) posits that "education Is a very Important key that Lars lie used to unlock many closed doors In a country". He noted that when a nation understands the imperative of education as a catalyst to development, such a nation would experience astronomic socio-economic growth in a short time. This assertion is a strong basis why there has been strong advocacy tor a functional system of education, if Nigeria Is to be liberated from her present economic Impasse. Functional education is quite different from the concept of education. While Education simply, refers to the process by which knowledge) and skills are acquired, Functional Education Is *mm* encompassing, meaningful and most desirable. This Is because it is the type of education that equips the recipient with the knowledge and skills needed for the performance of productive task. It is types of education that helps the society meet her developmental needs, (Kayode and Sunday (2014), Yehudah (2023) also defined functional education as that type of education that connects all study with specific needs and roles, towards which the beneficiary's Interest Is directed. Through It, the recipient gain thinking habits and develop technical means which who help him solve his practical problems. These underpinnings about functions) education encapsulate the essence, vision and mission of business education, In support of this, Oladunni (2020), stated that as stipulated by the National Board for Technical Education (NBTE), Business education at the polytechnic have amongst others, the following objectives:

i. Provision of full-time course of Instruction and training in engineering, other technologies, applied science, business and management, leading to the production of trained manpower.
ii. Provision of technical knowledge and skills necessary for agricultural, industrial, commercial.af economic development of Nigeria.
iii. Give exposure on professional studies in technologies.

To fulfill the above objectives, Business education must be tailored to fix competently into the realities occasioned by emerging technologies, In an attempt to maintain Its relevance to modern trends.

2. LITERATURE REVIEW

2.1 Emerging Technologies

Emerging technologies have been the subject! much debate In academic research (Danlele, Diana and Ben, 2015). There are divergent opinions as to what emerging technologies are. The contention as to what an acceptable definition of emerging technologies should entail, is shrouded In the context of what qualifies a technology to be "emergent", According to the trio, while some definitions emphasize the potential Impact emerging technologies are capable of exerting on the economy and society other schools of thoughts give credence to the importance and uncertainty associated with the emerging process of such technology. For purpose of clarification, this paper submits to the conceptual approach of Daniels, Diana, and Ben (2015), which states that "to clarity the conceptualization of emerging technologies it is important io integrate different conceptual contributions on the topic into a more precise and coherent definition of 'emerging technology". By definition 'emergence' or 'emergent', is the process of coming into being, or of becoming important and prominent" They agreed that for a technology to be emergent, it must reflect the following five (5) basic attributes:

1. It must be radically novel
2. Its growth must be relatively fast
3. It should exhibit coherence
4. It must have prominent impact
5. It must reflect uncertainly and ambiguity.

In adopting these five elements, "emerging technology can be seen as a radically novel and relatively fast growing technology characterized by a certain degree of coherency persisting over time and with the potential to exert a considerable impact on the socio-economic domain(s), which is observed in terms of the composition of actors, institutions and patterns of interactions associated knowledge production processes (Daniele, Diana, and Ben (2015). Also, emerging technologies are those technologies whose development, practical applications, or both are Still largely unrealized. These technologies generally include both new and older technologies finding new applications, and have the propensity of changing the status quo, (Wikipedia, 2023). In another sense, emerging technologies mean a wide range of applications and services that take advantage of Artificial Intelligence (Al), Virtual and Augmented and Mixed Reality, wearable technology such as head mounted displays and sensors, social robotics and the Internet of Things (lOT) enabled by the ultrafast 5G mobile standard. In similar terms, emerging technologies refer Io technologies that are currently developing, or that are expected to be available within the next five to ten years, and that are creating or are expected to create significant social or economic effects. Tesfahunegn and Makonnon (2019). The following are some of these emerging technologies:

2.1.1 5G Technology: It is a contemporary technology that offers new interfaces to all end-user devices and network components. The quest for 5G stems from the rapidly developing desire to build a highly connected and globalized world in which information and data are easily and equitably accessible to everyone around the globe.

2.1.2 Artificial intelligence (AI): It is seen as a system that can collect data, learn, decide and take rational actions using appropriate methods such as machine learning deep learning and reinforcement learning.

2.1.3 Autonomous Vehicles: They are vehicles that can perform their functions with artificial intelligence algorithms defined in their content, sense their environment and operate without the need for

2.1.4 Virtual Reality: A place where the users can be part of a 3D space, it will be a replica of what you arc- viewing but it will foci like reality. A headset must be worn by the user which will have 2 cameras one For each eye.

2.1.5 Biometrics: This refers to the authentication ol a person's identity through chemical, physical and behavioural characteristics. Biometric technology offers a safe and convenient identification system; users do not have to remember complex passwords or carry identification documents, easily lost or stolen.

2.1.6 Blockchain: It can be seen as a technology protocol that enables data sharing with trust-based transactions such as identification and authorization in a decentralized-distributed network environment without the need for approval of control of a central authority

2.1.7 Robotics: it is an autonomous mechanism capable of detecting its surroundings, doing calculations to make judgements and acting in the real world is called a robot.

2.1.8 Cloud Computing: It is a technology that provides elastic and scalable computing techniques Io fulfil information technology capabilities delivered in varying service mode is through the Internet. Moreover, it is an easy way to share [he folders with other people and work by collaborating with them via the Internet from the persona! computer or network servers

2.1.9 Internet of Things (lOT): It connects the virtual world with real-world physical activity. The fundamental idea behind the internet of Things is to create an independent and secure connection that allows *data* to be sharer) between physical objects and real-world applications

2.1.10 Big Data: Big data research is at the forefront of modern business arid science. It mainly includes data from online transactions, videos, images, audios, emails, logs, click streams, postings, social networking interactions, science data, health records, sensors, search queries, mobile phones and associated apps.

2.1.11 Cyber security: Cyber security is the practice of protecting systems, networks and programs from digital attacks.

2.1.12 Facebook and Virtual Schools: They could be used by teachers to teach, educate, and instruct their students and come up with the intended outcome. The virtual schools offer courses through distance learning method and internet-based delivery. Some schools could combine this with the traditional classroom teaching and achieve good results.

2.1.13 Blended Learning: Blended learning as explained by Trinio (2002) are learning models that combine traditional classroom practice with e-learning solutions. It means that the subject matter has to be considered, the objective and outcomes, the characteristics of learners and the learning context so as to get the most effective instructional and delivery models (Agbo, 2015).

2.2 Business Education and the Challenge of Emerging Technologies

Business education is part of vocational and technical education programme that prepares an individual for career in business and also to be an intelligent consumer of economic goods and services. Business education provides students with needed competencies, skills, knowledge, understanding and attitudes to perform as workers in industries, civil service and also as proprietors of businesses. Business education is work focused, skill based, result-oriented and technology-based (Ugwoke in Utoware and Amiaya, 2014). American Vocational Association (AVA) in Osuala (2009) explained that Business education is a programme of instruction that consists of two parts: (a) office education; a vocational Education Programme for office careers through initial refresher and up grading education leading to employability and advancement in office occupation and (b) General Business Education; a programme to provide students with information and competencies which are needed by all in managing personal and business affairs and in using the services of the business world. If business Education must remain relevant, it has to attend and deal with the current technological needs of people and the society educationally economically and socially.

Given the rate at which technology evolves, the current slate of Business education and mounting clamour for an education that is responsive to needs of the modem society, no doubt, the future of 5 business education as a course of study is poised with critical challenges. Southgate, Erica, Blackmore, Pieschl, Grimes, McGuire and Smithers (2019) highlighted three areas of such emerging technologies has infused into education;

2.3 Built Technologies

They are those technologies that are designed for special functions. They include:

a. **Intelligent Tutoring Systems**; refer to educational software's containing an artificial intelligence component. They are designed to provide immediate and customized instruction or feedback to learners, usually without requiring intervention from a human] teacher, e.g Chatbot

b. **Teacher-supporting technologies**, e.g. These are specialized softwares that help facilitate teaching and learning, example is google classroom, and various google apps.

c. **Institution-supporting technologies**, such as Al-powered timetabling software or other technology that systematically collect data across applications and help proves such data, E.g. Student information management systems.

2.3.1 Invisibly Infused Technologies

These are technologies that often enter through a 'back-door" without the knowledge of end-users. Examples are smart phone applications:

2.3.2 Repurposed Technologies

These are existing technologies, which were first developed for another field and are then adapted to educational contexts, examples arc automated translation from one language to another, Voice and face recognition technologies.

Reflecting on the impact of these new technologies on teaching and learning, Ezeani and Ishaq (2012) observed that the pace of change brought by new technologies have had significant effect on the, way people live, work arid play worldwide. They noted as new and emerging technologies continue to pose serious challenge to traditional process of information use, dissemination and management, obviously, there will continue to be a renewed call for a type of training that can practically address those challenges. Training in this respect is defined as a mixture of teaching and practices carried out in other to attain a desired standard of behaviour efficiency and effectiveness. (Nzota cited in Ezeani and Ishag 2012), Also training is a way of building capacity into people and adding of values in area of knowledge, skills and attitude. (Egungu cited in Ezeani and Ishaq 2012). While Patrick Obeten and Akputu (2021), agreed that there is no academic programme that can help achieve these levels of training other than business education, it is important to reflect on the skills and competencies of key players in the training process. The question to ask at this point is, does these the emergence of these technologies require a slightly different awareness, understanding and skill set for business educators to be able to efficiently and effectively fit into these technological trends.

2.4 Emerging Technologies and their Implications on Business Education Curriculum

The term curriculum has been associated with academic study and training in higher education. Curriculum, from its original Latin meaning, means "funning a course" or a course which one runs to reach a goal Ogwu and Oranu cited in Jude & Anita 2014). Curriculum can also be defined as a structured series of intended learning experiences that embrace purpose experiences provided and directed by educational institutions to achieve predetermined objectives (Atucyi and Oholo in Jude and Anita 2014), Looking at contributions from these viewpoints, we can say conclude than the importance of an amenable curriculum in business education is not only germane but must reflect changes brought about by emerging technologies. The restructuring of business education curriculum to adapt these changes is seen as the evidence or implications of new technologies on business education. This form the basis why Osuala (2009) emphasized the need for better preparation of business educators, if they are to remain relevant. To achieve these, pillar number 7 of the National Digital Economy Policy and Strategy (2020-2030), stipulate amongst others, three important strategies:

i. Need on the part of government to collaborate with the private sector, academia and development partners to create Centers of Excellence in Emerging Technologies.

ii. Need to Include topics on emerging technologies across the broad spectrum of formal and vocational education in the country.

iii. Encourage tertiary institutions to introduce/enhance courses on emerging technologies through the relevant regulatory institutions.

The above implementation strategies, affirm that it is not enough to review the content of Business education curriculum, but also to sensitize business educators make themselves open to these new technologies. Leveraging on new technologies for skills acquisition of business educators in tertiary institutions in Nigeria has some implications in the teaching and learning (Enang & Okute, 2019). In the aspect of Ubiquitous computing (UC) and its application to u-learning, mobile computing technologies can enhance learning when blended together to engage and motivate learners anytime, anywhere. This type of learning using UC technologies when properly integrated into the teaching and learning of business education would be more advantageous compared to other means of learning in terms of flexibility, mobility, convenience, low cost, and user friendliness. Collaborative technologies such as Facebook and Google Groups can facilitate collaboration as well as Dropbox, Google Drive, WhatsApp and Skype. Slack is also a smart platform that works on mobile and desktop devices, and allows sending direct messages and files to a single person or a group of employees. Slack also has the ability to organize conversations into different channels like specific projects, general chat, among others. The app supports video calling, and drag, drop and sharing of files with colleagues directly within Slack. It is also compatible with services such as Google Drive, Dropbox and Box. These emerging technologies can facilitate effective teaching and learning of business education programme. When applied in teaching and learning of business education programme, AR and MR brings together real-world and digital elements in the teaching and learning process. It allows interacting and manipulating both physical and virtual items and environments, using next-generation sensing and imaging technologies. MR also allows people to see and immerse themselves in the world around them even as they interact with a virtual environment using their own hands.

Artificial Intelligence (AI) can furthermore, automate basic activities in business education, such as classification and grading, extra support tailored to students need. It enables students and teachers have the opportunity to provide useful comments for others to benefit and share experiences in personal and professions lives. AI systems specify the areas that need improvement in the study courses, as it helps to improve and fill gaps that can occur in educational courses. It helps to ensure that all students build the same conceptual foundations; instead of waiting for the teacher to listen, students get instant feedback that helps them understand the concept and remind them how to use it in the future. AI can also provide students with a way to learn in a relatively rule-free environment. When properly integrated into business education programme, AI can allow students and teachers to grasp the opportunity to choose the proper places for learning and enhance their educational abilities whether at home, school or other places. Consequently, the application of emerging technologies into teaching and learning of business education programme can enhance tutoring in academic lecture halls, classrooms, laboratories and interactive study places in colleges, institutes or other educational institutions. There will be no need for the teacher to repeat the explanation of a certain topic or a part of it and spend more time with students to understand that part; the student can now achieve that easily with AI without embarrassment or waste of time. It can facilitate student's grade such that teachers can quit grading to spend more time with students. It will eliminate the classrooms' walls to allow students to share knowledge and participate in different learning global environments In a TVET system built out of hundreds of distinct units,

AI could be used to recommend educational/training resources; learning opportunities; and personalized career pathways, based on aptitude, educational goals and past performance

2.5 Importance of Emerging Technologies to Business Education

The Importance of the emerging technologies to Business education cannot be over emphasized. The following are some of them in Business Education:

The changes in technologies have made Business education trend to shift from only classroom teaching to technological based teaching and learning. This has made the students to learn new specialties, new knowledge, and application of new methods and processes of work execution and business operations.

In line with the above, Fioreti (2007) noted the following points as the external and internal environments of the enterprise that are necessary for Business Education teaching and learning:-

2.5.1 Technological progress: it demands new specialties, new knowledge, and application of new methods and processes of work execution.

2.5.2 Consumer demands and necessities: they demand work places with new or different content (for quality, variety, facilities, speed, personal services, new products or services).

2.5.3 Mergers and buying out: They demand new organizational culture, new work places, and different work contents.

2.5.4 Functions re-planning and organizing changes: They demand new competences, widened duties, and different work contents.

2.5.5 Performance gap and non-effective exploitation of productive resources: Performance gap and non-effective exploitation of productive resources that are due to the employees insufficiency or their differentiation in value system and their attitude towards work and business.

2.5.6 Professionally occupied: Business education makes people to be professionally occupied with the organizations as workers or enterprise managers after graduating or completing training. This education is placed more in the process of the institutes which have as a basic aim to offer to students a general knowledge frame and develop some basic professional skills that will make the graduates capable of undertaking administrative duties in several positions and in variety of business enterprises.

2.5.7 Equipping the students/learners with current skills and knowledge: Business education involves a procedure of education that aims to equip the students/learners with the knowledge, techniques, skills acquisition and develops attributes and behaviours which will make them effective in their work and businesses after graduation. It has a longer-term horizon which helps the students to acquire knowledge and develop faculties that will enable them in their future endeavours which would demand more responsibilities and initiatives for them to survive in the world of work.

4. CONCLUSION AND RECOMMENDATIONS

Emerging technologies in the educational sector have really improved teaching and learning in schools. This can only be achieved when the use of these technologies are positively utilized in the right direction and if not properly used, it could be dangerous and enslave the users. There is urgent need for Business education to adopt to this era of technological base, because change is the only thing that is constant in life. Having examined emerging technologies and their implication on the future of Business education, it is important to state that the challenges that complement emerging technologies and the important role of Business education as a tool of transition that is capable of providing learning experiences that will equip its graduates with requisite competencies in the use of emerging technologies.

The researcher made the following recommendations in line with the topic:

1. Business educators should pick up the challenge to develop their skills in order to impact their students with current or emerging skills, Knowledge and altitudes to live arid work in technologically dynamic society.

2. Government should provide adequate funding through its appropriate regulatory agencies to equip business education departments in tertiary institutions.

3. Educational institution authorities should equip business education departments with these new technologies for effective instructional task in business education programmes.

4. Training and retraining of business educators should be a priority so as to update them with the new technologies available.

5. The review of curriculum to be done as at when due. This should be done based on changes in the society and trend of events. The bodies concerned should not wait until it is overdue.

REFERENCES

Agbo, J.C.O. (2015) Information and Communication Technology and Business Education in Nigeria. *European Scientific Journal May Education*, 8(10)

Danlele, R., Diana .H, & Bon R. M. (2015). What Is an Emerging Technology? Science Policy Research Unit, University of Sussex, Brighton, United Kingdom

Enang C. E. & Okute, A. L. (2019). Leveraging on new technologies for skills acquisition of business educators in tertiary institutions in Nigeria for the e-world. *Nigerian Journal of Business Education*, 6(1), 331-330. Retrieved from www.nigjbed.com.ng

Ezeani N. S. & Ishaq A. M. (2012). Emerging Issues in Business education: A Panacea tor Elective Utilization and Application of ICTs as A Tool in Business Education

in Nigerian Universities. *Journal of Review of Public Administration and Management Vol. 1, No. 2, November 2012*

Fioreti, G. (2007)The Organizational Learning Curve. *European Journal of operational Research*, Vol. 177(3), 1375-1387.

Jutle D. A.U., & Anita, O. A. (2014). Impact of New Technologies on Tertiary Business Educalion Curricula. *Educational* Research *lnlamnlionfil Journal,* 'ifJJ *February*

Minwuyelet (2019) Introduction to Emerging Technologies. Bahir Dar University Addis Ababa National Digital Economy Policy and Strategy (2020-2030), www.ndpb.aov.na

Ogbonriaya, Esther Abosede (2020). Education as a Key to National Development in Nigeria, *Intermilary .hums of Research and Innovation in Social* Scieiwe *(UfilSS) IV(VIII).*

Osuala, E.C. (2009) *Business and computer Education*. Enugu. Cheston Agency Ltd.

Osuala, E.G. (2000). *Business and computer advent/an.* Enugu: Cheston Agency Ltd.

Patrick B., ObHlen B.U; SAkpuiu M.O (2021). The Kole of Business Education in Repositioning the Ailing Global Economy. *International Journal of Research in Education and Sustainable Development* j, *1(4). wwwijsar.org.*

Scenarios V. Riiriy .P; & Yvc^ M. C. (2020). timerying Technologies arid The "fcHchiny Profession: Ethical And Pfidagogiral Considerations Based on Near-Future Scenarios .IRC Science for Policy Report Publication of the European Commission. (https://crcalivocommons.org/licenscs/bv/4.0/ Wikipcdia, (2023), www.en.rri vjikiucdia.org/wiki/Emciaing technologies

Sinati KiJIeoglti (2020). Emerging technologies Value Creation for Sustainable Development, DspHftmeni of Engineering, University of Cambridge, Cambridge, UK

Snufhgate, Frica, Rlackrnnns. K , Hitachi, s , Grimes, S,, McGuire, J., & Smithers, K (2019). *Artificial Intelligence* and *Emerging Technologies in Schools* (p. 155). University of Newcastle, www.docs-edu, governs, cjov.au/sysle in/flles/doc/other/aiet^flnaLreporl_august_20"18 Tesfahunefjn

Trinio, V.L. (2002) ICT in Education UNDP Bureau for Development Policy, Retrieved 14th September, 2015http://www.epimers.org

Utoware J.D.A. &Amiaya, A.O. (2014) Impact of New Technologies on Tertiary Business Education Curricula. *Educational Research International*, 3(1), 40-47.

Yehutiah, Z. (2Q23), hinctional bduwstion, w«w sii-v-[1], mafh:-, rutgfir-: fi[Jij/~2eilt>erfj'famii[i]/;EncKhi1_J]fml 643