# DEALING WITH TECHNOPHOBIA AMONG LECTURERS (ADULT LEARNERS) IN THE USE OF EMERGING TECHNOLOGIES IN AFRICAN EDUCATION AND DEVELOPMENT

By

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## Abstract

*New technologies that affect the expansion of knowledge keep emerging globally but developing African nations are not at par with the developed nations in their usage. The United Nations Sustainable Development Goals promote inclusivity in every aspect of life but some adult persons including tertiary institution lecturers in Nigeria are often left behind in the scheme of things technologically. Unfortunately, some of them are highly placed influencers who resist the adoption of new technologies, thereby causing stagnation in organizations, frustrating efforts of digitally inclined members and generally delaying progress. Such individuals are lost betwixt and between, often hoping for retirement to come faster because they are living with technophobia. Technophobia is an overwhelming fear of technologies like computers, cell phones and artificial intelligence. It becomes a source of grave concern when many adults living with this malaise are lecturers in citadels of learning. The input of some great academics are sometimes lost due to technophobia as they stylishly shy away from functions that will expose their digital inadequacy. This study posits that the problem of technophobia among lecturers in Nigeria tertiary institutions in Nigeria can be addressed so that they can be liberated. The study highlights the implications of emerging technologies in African education on the crafts and practices of adults, especially lecturers, living with technophobia by defining key concepts such as emerging technologies, education, development, adult learner, lecturer and technophobia. It covers the history of the use of technologies in education, why lecturers as adult learners resist emerging technologies, manifestations of technophobic tendencies among adult learners, and challenges facing lecturers that are living with technophobia in handling their academic duties. Furthermore, the study discusses other consequences of dealing with lecturers living with technophobia on their institutions and colleagues among others and concludes that it is important to adopt measures that will break the fears and anxieties towards emerging technologies among lecturers Finally, the study proffers solutions to technophobic tendencies among lecturers by highlighting findings of similar studies*

*reviewed and opinion of experts on the matter. The study recommends that concerted effort must be made by stakeholders to deliver lecturers from technophobia in order for Africa to optimize the gains of utilizing emerging technologies.*
***Key words:*** *Technophobia, emerging technologies, African education, adult learner, lecturer*

## INTRODUCTION

New technologies that affect the expansion of knowledge keep emerging globally but there seems to be a disconnect as everybody is not carried along. The governing world bodies advocate for inclusivity but it has been observed that some people are not carried along in the embrace of new technology as they find it difficult to adapt to new ways of doing things. Some of the highly placed individuals in different organizations resist changes such as the adoption new technologies for different activities. They cause stagnation in organizations, frustrate the efforts of digital members and generally delay progress. They keep wishing for when things will go back to normal but newer normal keep emerging. They are lost betwixt and between, often hoping for retirement to come faster. Where they are in charge, they keep insisting that things be done the analogue way. Some of these people are living with technophobia. It becomes a source of grave concern when many of them are in citadels of learning. They can be located in various spectra of non-acceptance, non-adopting and non-adapting to technologies. Some of them try to get younger people around them to cover for them while fear of failure cripples some others into not willing to try at all. They often cover up by claiming they prefer the old ways. Some are just holding on till they can retire and leave the system. The input of some great academics are sometimes lost due to technophobia as they stylishly shy away from functions that will expose their digital inadequacy. The concern of this paper is to ultimately suggest measures that can be used to assist lecturers to successfully deal with technophobia in order to make for inclusive embrace of emerging technologies in African Education and development.

### Emerging technologies

Two words, emerging and technology, make up the term emerging technology. Emerging means newly formed or prominent (Meriam Webster, n.d.); or newly created or noticed and growing in strength or popularity, becoming widely known and established (The Britannica Dictionary, 2024). Technology, on the other hand, is the use of knowledge to invent new devices or tools that makes people's lives easier. Technology is the application of scientific knowledge to achieve practical ends. It encompasses highly advanced things like computers, to simple things like hammers and wheels. Human beings have grown to use technologies so much so that it is as if man cannot survive without using technologies. Newer technologies keep evolving and emerging to meet the ever changing needs of man.

Emerging technologies refer to technologies whose development, practical applications, or both are still largely unrealized. They are those technical innovations which represent progressive developments within a field for competitive advantages. According to Winston and Strawn (2024), emerging technology is a term generally used to describe a new technology, but it may also refer to the continuing development of an existing technology. It can have slightly different meaning when used in different areas, such as media, business, science or education. The term also commonly refers to technologies that are currently developing, or that are expected to create significant social or economic effects.

It is important to note that emerging technologies are new but also include older technologies finding new applications (Naveed, 2023). Emerging technologies include

a variety of technologies such as educational technology, information technology, robotics, and artificial intelligence (AI). Others are internet of things (IoT), augmented reality (AR), machine learning, virtual reality (VR), big data, advanced analytics, blockchain, clean tech, and internet of behaviour (IoB), etc. Sometimes these technologies represent previously distinct fields which are in some way moving towards stronger interconnection with similar goals and are as such called converging technologies. Convergence brings previously separate technologies such as voice, data and video together so that they share resources and interact with each other, thereby creating new efficiencies. Some characteristics of emerging technologies include radical novelty in application even if not in origins, relatively fast growth, coherence, prominent impact, uncertainty and ambiguity. As can be deduced from the characteristics, emerging technologies are capable of changing the status quo (Naveed, 2023). Sometimes it brings about a completely new way of doing things and new way of life which confounds some adult learners. Unfortunately, a lot of people especially adults are left behind in the embrace of new technologies. Surveys show that one third of every nation lag behind in technology (Giacomo, Ranieri, D'Amico, Guerra & Passafiume, 2019). One key way of surviving in ever changing world is learning how to learn, which is part of education. Globally, the use of technologies in education has brought unprecedented gains but the concern of this paper is mainly on the use of emerging technologies on African education and development which technophobia have deprived have limited some people's participation.

## African Education and Development

Development is a process that creates growth, progress and positive change. Education is incontrovertibly the instrument per excellence for development. Nations that know better pay premium to education by giving all necessary attention to the education of its citizenry through adequate resource allocation, training of personnel, subsidizing the cost of education, as well as enabling they are at par with global best practices among other things. With the introduction of technology in education, both students and lecturers or teachers benefit from having a range of tools and learning technologies to work with. Digitization of education is a laudable project that encompasses the application of wide spectrum of practices including blended and virtual learning (Onyia, 2021). Things are simplified, made easier, faster, more accessible and with wider reach.

Globally, developed nations appear to be tops in the adoption and use of emerging technologies but African nations lag behind. Bad governance and deep rooted corruption that prevail in most African nations may be responsible for why Africa trail behind. Governments are supposed to be responsible for driving technological advancement, economic development, and higher living standards, but regrettably in Africa the governments are not paying attention to this. Lately, South Africa and few other African nations are rapidly adopting emerging technologies but same cannot be said of all Africa nations. Nigeria is making in road but the pace is slow. Although it is said that one third of every nation are normally left behind in new technology adoption, African nations should not rest their oars as they have a whole lot of challenges and constraints to development.

Historically, Africa has been a passive recipient of technologies and their international regulations. The internet gave tremendous impetus to African education especially during the lock down days of COVID-19. Technology has positively impacted how students learn, to how teachers enhance their skills, enrich classroom environments, as well as impacting how administrators manage grades, maintain security, track payments and follow up with guardians, parents (Superprof, 2021) and even alumni.

Badaru and Mphahlele (2023) conducted a narrative review of pertinent literature to critically assess the effects of two types of emerging digital technologies – artificial intelligence (AI) and nanotechnologies in Africa. The researchers found that while AI and nanotech have had substantial impact in many spheres of African economies, there are still large disparities in the accessibility of technology and digital skills in several rural and undeveloped areas in Africa.

Africa faces a significant digital divide, marked by limited internet access, insufficient funding for research and development, inadequate government support, and disparities in educational opportunities, including the limitation of the continent's meaningful participation in emerging technology development. The good news is that Africa's journey in shaping the future of emerging technologies, particularly AI, is just beginning (Suleiman, 2023). Through proactive engagement, strategic positioning, and concerted efforts to bridge the digital divide, Africa can harness the power of emerging technologies to benefit its people and the global community.

Government, universities, public and private sectors including large enterprises, small and medium size enterprises (SMEs) and start-ups play a dominant role in the innovation, development and application of emerging technologies such as AI, machine learning, IoT and others in the digital economy, hence enabling digital talent to flourish and improve Africa's digital landscape (United Nations Economic Commission for Africa (2023). Stakeholders in tertiary institutions such as universities, polytechnics and colleges of education have enormous task to ensure that the continent is not left behind in the scheme of things as it concerns the use and adoption of emerging technologies. Stakeholders in higher education include lecturers, government, students, school owners, parents, Nigerian Universities Commission and the community leaders

## Lecturers as Adults and Use of Emerging Technologies

Members of the academic staff of various tertiary institutions are popularly called lecturers. A lecturer is a person who gives lectures especially as a profession at a college, polytechnic or university. Lecturers as academics are men and women of letter, highbrow, thinkers, egg heads, book worms, tutors, trainers, instructors, dons, teachers and scholars (Chukwuemerie, 2018). Lecturers are highly regarded in the society and are often sought after to educate the people in the communities on pressing issues. Lecturers have served as umpires during national and state elections. They have also contributed greatly in enlightening and educating the populace on various issues outside their core engagements in consonant with their three core duties of teaching, researching and community services.

Lecturers are first and foremost adults that are particularly trained to help learners tackle ever changing challenges of aspects of life especially as it relates to their disciplines. As adults, they are purveyors of development who also need some form education to meet up in their developmental task, so lecturers can be both adult learners as well as adult educators. Lecturers as adults need continuing and life-long education to be able to deal with ever emerging demands of succeeding centuries. They often seek to upgrade their knowledge and capabilities by enrolling in both formal and non-formal education programmes. Lecturers have the responsibility of training, teaching, instructing, facilitating, mentoring, coaching, counselling and guiding learners in their various departments. They are expected to weave in discussions of current societal problems, their solutions as well as direct learners on the correct attitude to ever emerging issues of life while enabling learning (Chukwuemerie, Ihekwoaba, & Okonkwo, 2023). As the teachers of teachers,

lecturers should be in the vanguard of the adoption and the use of emerging technologies but unfortunately, these writers observed that many lecturers are lagging / left behind in the adoption and use of emerging technologies. Some factors that constrain the adoption and use of emerging technologies include lack of availability. The use of emerging technologies is often resisted by adults because of the discomfort and shift from their known normal the adoption entails. One of the characteristics of adult learners is that they are obstinacy. They resist change so it is not surprising that some lecturers still hold on to the old ways of doing things. It is also possible that their holding on to the old ways is a cover for their fear of use of technology, which is termed technophobia.

## Technophobia

Technophobia is characterized by fear or anxiety towards technology use, particularly among those that lack digital literacy. It is a prevalent barrier in African education. Uche (2011) found a high significant level of technophobia among senior staff members of University of Calabar. Then Uche recommended that university staff accept technology or remain clogs in the wheel of progress. At the time of that research the technology then were computer, internet and perhaps cell phone. Technology has evolved and become more complicated so anxiety is expected to also increase. Factors such as limited access to technology, inadequate training, and cultural perceptions contribute to technophobia among learners. Overcoming technophobia is imperative to empower learners to engage fully with emerging technologies and leverage them for personal and professional growth.

Technophobia is not an officially recognized mental illness. It is the extreme and irrational fear of technology (Rungta, 2016). Technophobia is described as abnormal fear or anxiety about the effects of advanced technology, affecting one third of the population, causing health problems and the inability to work efficiently. This fear is related to an irrational fear of computers, robots, artificial intelligence, weapons, and other such objects that seem advanced in scientific thought Giacoma, Ranieri, D'Amico, Guerra and Passafiume (2019). The study investigated the emotional impact of technology use in an Italian adult population and to detect technophobia. It was found that a considerable proportion of the adult population is not digitally skilled, enlarging the gap between young (native digital) and non- digital adults and senior populations. It was also found that adult non-inclusivity also affects the quality of their life.

Technophobia is the umbrella term for describing someone who has any type of tech-related fear. It covers specific anxieties and fears associated with the adoption and use of technology such as cyberphobia, nomophobia, telephonophobia, laremophobia, selfiephobia (DiGiose, 2014). Cyberphobia is an extreme fear of computers. People with this anxiety disorder may also fear smart phones and the internet. Severe cyberphobia can cause people to avoid going to work, school or any place where there might be a computer (Cleveland Clinic, 2024). This problem should not be left to linger on.

It is no longer new that digital literacy has become as important as the traditional literacy of ability to read, write and do basic computation. Not being able to cope and function in the digital world excludes people. The Italian study above disclosed that lack of digital literacy reduced the quality of lives of adults. It can only be imagined what lecturers (academics and people that should know all things, feel when they are cut off from the scheme of things - online lectures, seminal, hybrid and online conferences and virtual meetings and trainings. They would feel lost. It is capable of

attacking their self-esteem. They resist change. They shy away from events that will expose their inadequacy. Some actually do not see anything good coming from the new technologies. It is a mindset thing and it is crippling. They don't trust the system at all. They often could not wait for retirement to come so that they flee from embarrassment engendered by lack of ability to use the emerging technologies. They often hope that the nightmare would be over and things return to the normal old analogous way. Alas, it is not to be! Things get more complex and complicated. Among these lecturers are very highly erudite scholars that have made their marks in the sands of time. There is no gainsaying the fact that it is imperative to put in place measures that will help this category of people overcome their fears and get integrated into the new normal. The gravamen of this paper is that whereas technophobia robs the educational system of the contributions of technophobe lecturers, the lecturers must be helped to help themselves and their institutions and community. These writers also thought it fit to discuss the challenges faced by lecturers living with technophobia in their duty as academics as a prelude to proffering solutions gathered from literatures reviewed.

## Challenges Facing Technophobic Lecturers in Handling Their Duties as Academics

Technophobic lecturers encounter numerous challenges in carrying out their academic responsibilities. In the first instance, the fear of technology may hamper their capability to effectually utilize front-line teaching and research tools and platforms. In this regard platforms that engenders blended learning such as google classroom, google meet, cisco, zoom or WhatsApp are rarely used. Ali and Ahmad (2020) opined that this may lead to low student engagement, unproductive course content delivery, and an obsolete teaching strategy that doesn't work with contemporary learning styles. Consequently, the students may resort to old fashioned route learning of ‘garbage in garbage out’ in place of experiential learning. Such students can hardly compete with their counterparts in institutions with more technological savvy lecturers. In addition, technophobic tendencies may deter lecturers’ professional development to the extent that they may not meet up with global best practices in their respective disciplines.

Ferdig, Baumgartner, Hartshorne, Kaplan-Rakowski and Mouza (2021) affirmed that fear of technology results in difficulty in adapting to new educational practices including online learning management systems and utilization of digital assessment tools. It is pertinent to note that the present dispensation is definitely uncomfortable for anyone who lacks computer literacy howbeit those in academic field. In other words, lecturers that dread technology cannot access varieties of online educational courses available for their professional development. Similarly, digital assessment tools that ease the workload of manual evaluation of students are not utilized by such lecturers thus making their works more burdensome.

The fear of technology may lead to a lack of experimentation with innovative teaching methods, stifling creativity and innovation in the classroom (Al-Badi, Al-Badi, & Patel, 2017). This implies that lecturers with technophobia may find it difficult to try out inventive teaching strategies thereby preventing not only their own creativity and novelty but those of the students in the classroom. Creativity and novelty in teaching and learning processes is a major feature of the 21$^{st}$ century pedagogy sought by every institution of learning for optimal performance. Hence lecturers who do not embrace technology constitute a hitch in the wheel of such institution’s progress.

Lecturers who are afraid of technology could become more stressed and anxious when faced with technology-related tasks. Functions like the creation of multimedia

presentations or running online classes become cumbersome and generates lots of anxiety. This not only affect their teaching effectiveness but also impacts on their mental health. Cheng and Yuen (2020) were of the view that such condition may deteriorate lecturers' working conditions and influence their over-all job satisfaction and comfort. This explains why analogue lecturers are not comfortable with the current demands of the teaching profession. Razak, Baharon, Abdullah, Handon, Aziz, and Anuar (2019) perceived that technophobic lecturers may experience emotions of inadequacy and professional insecurity as a result of their ongoing battle to keep up with technological changes. This notion is evidenced where such lecturers are at the helm of affair, they always insist things are done in antiquated fashion. Compliance with instructions on technology aggravates their anxiety and aversion towards embracing new technology. Eventually, these challenges not only hinder individual lecturers' efficiency but also have extensive implications on the standard of education and academic results within their institutions.

## Negative Effects of Dealing with Lecturers Living with Technophobia on Their Institutions and Colleagues

The presence of technophobic lecturers can have damaging effects on their institutions and colleagues. According to Sang et al., (2020) their unwillingness to adopt technology may deter the total digital transformation plan of the institution, slowing down efforts to update instruction and learning methodologies. It is pertinent to note that institutions with greater number of technophobic lecturers can hardly cope with the current demands of academics. This is because both institutions and lecturers' global visibility are indices of academic effectiveness in global rating. Hence, delay in institution's digital transformation due to technophobic tendencies will keep such institution perpetually under the ladder of global visibility and ranking.

Mishra and Koehler (2006) posited that technophobic tendencies among lecturers can lead to a digital divide in institution, whereby technologically savvy lecturers would be progressing while others lag behind, noting that this leads to inequalities in teaching quality and student learning experiences. In this regard, same quality of instruction cannot be guaranteed when a particular course is being taught by different lecturers with different technological stance. Similarly, academic excellence would not be guaranteed for students taught by lecturers who lack proficiency in technology. In other words, students who are groomed by technologically proficient lecturers would perform better than those taught by analogue lecturers on same course.

Furthermore, the unfavourable attitudes of technophobic lecturers towards technology can lead to conflict and opposition within academic departments. Evidences abound where the younger lecturers who are more technologically inclined are always misunderstood by their senior colleagues in in ways and manners of doing things in the department. This creates an atmosphere of tension and tacit hostilities thereby hindering collaborative efforts to incorporate technology into the curriculum.

Technophobic tendencies among lecturers may limit institution's capacity to attract and retain students who are becoming more and more accustomed to digital learning environments and innovative educational experiences (Wachira, Mail, Munyasi, Nzioka, Mwangi, Kaguthi & Kithome 2010). It is worthy to note that the younger generation is characterized by techno-mania (craze for technology) and so any process or activity that does not optimize its usage becomes repulsive to them. In this regard, the present-day students can hardly be retained in institutions that play down the use of technology in instructional delivery. Such institutions may run the risk of fewer students' enrollment and less competition in the field of higher education.

Venkatesh, Morris and Davis (2003) posited that the presence of lecturers who are averse to technology could hamper the application of technological policies and solutions across the institution, resulting in inefficient use of resources and administrative procedures. Vital policies are normally put in place to cope with the demands of technological advancement in institutions of learning, however, when such policies are not implemented the purpose becomes defeated. In this regard, technological policies that are not applied due to technophobic tendencies of lecturers will still keep the institution in the dark. This will not only lead to waste of time and resources but also stagnate human and material development in the academic environment. Dealing with technophobic lecturers has detrimental effects not only on the academic departments but on the reputation and culture of the entire institution.

## Proffered Solutions to Technophobic Tendencies Among Lecturers

The problems of technophobic tendencies among lecturers requires to be addressed through a comprehensive strategy encompassing training, institutional incentives and support. Ally (2019) affirmed that educational institutions should invest in extensive professional development programmes designed to improve lecturers' proficiency with digital literacy and confidence in using technology. The institution would need a lot of human and material resources to actualize a successful comprehensive professional development programme because it a capital-intensive venture. Hutchins and Klaus (2018) opined that such programme should provide practical training, workshops, and continuing support to help lecturers overcome their fear of technology and integrate it effectively into their teaching practices. Workshop can be organized for academic staff at regular intervals on information and communication technology. Such workshops when organized at no cost or a subsidized rate would in no small measure perk up lecturers' digital literacy skills.

Furthermore, mentorship and peer support can be of immense assistance to the challenges of technophobic tendencies. Graham, Woodfield and Harrison (2013) opined that technophobic lecturers can be paired with more technologically savvy colleagues who can provide guidance and encouragement. Such informal collaboration among colleagues will be of immense help, as technophobic lecturers would be more comfortable to discuss their worries with their colleagues than an outsider. This notion is in concord with Anurugwo (2014) who affirmed that adult learners learn better in an informal and democratic environment, hence lecturers as adult learners would benefit more from peer tutoring than in a formal learning environment.

Oliver, Perkins-Kirkpatrick, Holbrook and Bindoff (2018) were of the view that institutions should foster a state-of-the-art and experimental culture within the organization to encourage teaching and learning. Similarly, lecturers who display aptitude in the use of technology in improving students' engagement and learning results should be recognized and commended. In same vein, institutional management is vital in endorsing technology acceptance and providing the structure and resources required to make it easier for it to be included into the curriculum (Al-Fraihat, Joy, Masa'dah, & Sinclare, 2020). According to Al-Fraihat et al. (2020), this might entail making investments in leading-edge educational technology tools, modernizing IT facilities, and providing guidelines that support the utilization of technology in research and instruction. Finally, institutional massive involvement in addressing technophobic tendencies among lecturers will facilitate the values of inclusiveness and teamwork in the academic setting.

## Conclusion

This paper discussed technophobia as a constraint to the adoption and use of emerging technologies especially as it pertains to lecturers who are also adult learners. The paper hinged on the principle that learning is lifelong and every adult requires lifelong learning mindset to cope with changes and that this conflicts with the natural adult tendency towards obstinacy which makes adults resist changes. The paper posited that it is important to adopt measures that will break the fears and anxieties towards emerging technologies among lecturers. It was emphasized that emerging technologies are new but also include older technologies finding new applications. The paper listed some examples of emerging technologies and they include artificial intelligence (AI), internet of things (IoT), augmented reality (AR), robotics, nanotechnologies, machine learning, virtual reality (VR), advanced analytics, blockchain, cleantech, and internet of behaviour (IoB). The paper argued that poor governance, corruption and lack of political will were part of the problems militating against embrace of digital technologies that would enhance African Education and development. Challenges faced by lecturers living with technophobia gathered from literatures reviewed were also discussed. Solutions were proffered on things to do to help lecturers, howbeit adult learners, overcome technophobia and reclaim their lives and positions in the digital space. It is suggested that researches should be conducted among technophobic lecturers in order to find out from them how best they can be helped to embrace emerging technologies.

## REFERENCES

Al-Badi, A. H., Al-Badi, M. H., & Patel, A. (2017). Technophobia in academia: A study of faculty reactions to information and communication technologies. *Journal of Higher Education Theory and Practice, 17*(2), 43-53.

Al-Fraihat, D., Jot, M., Masa'dah, R., & Sinclare, J. (2020). Evaluating e-learning system success: An empirical study. *Computer in Human Behaviour. 102*, 67 - 86.

Ali, W., & Ahmad, I. (2020). Technophobia among university teachers: A case of Pakistan. *Arab Journal of Administration, 40*(4), 423-440.

Ally, M. (2019). Competency profile of the digital and online teacher in future education. *International Review of Research in Open and Distributed Learning. Vol. 20* (2), 303 – 318.

Anurugwo, A.O. (2014). Application of improved methodology in teaching post graduate students for quality assurance. *World Educators Forum Vol.7*(1) 313-320.

Badaru, K.A. & Mphahele, R.S. (2023). Effects of emerging technologies on African development: A narrative review on selected African countries. *Research in Social Sciences and Technology, 8*(3), 36-51. https://doi.org/10.46303/ressat.2023.19

Chan, K. H., & Yuen, K.-Y. (2020). COVID-19 epidemic: Disentangling the re-emerging controversy about medical facemasks from an epidemiological perspective. *International Journal Epidemiology*, 49(4), 1063-1066.

Chukwuemerie, O.C. (2018). Level of Academic Community Awareness of Cervical Cancer and Strategies for Public Enlightenment in Anambra State. A PhD Dissertation of Nnamdi Azikiwe University Awka, Anambra State, Nigeria.

Chukwuemerie, O.C., Ihekwoaba, E.N., & Okonkwo, I.G. (2023). Attitude to climate change mitigation in era of security threats: Towards the development and sustainability of African economies. *African Journal of Educational*

*Management Teaching and Entrepreneurship [AJEMATES], vol. 9* (3), pp.120 -131. https://ajemates.org

Cleveland Clinic (2024). Cyberphobia (fear of computers). https://my.clevelandclinic.org/health/diseases/22543-cyberphobia-fear-of-computers

DiGiose, N (2014). 6 tech phobias that actually exist. *Journalism*. https://nicoledigiose.com/2014/08/05/6-tech-phobias-that-actualy-exist/

Ferdig, R. E., Baumgartner, E., Hartshorne, R., Kaplan-Rakowski, R., & Mouza, C. (2021). Teaching, technology, and teacher education during the COVID-19 Pandemic: Stories from the field. *Association for the Advancement of Computing in Education (AACE).* https://www.learntechlib.org/p/216903

Giacomo, D.D., Ranieri, J., D'Amico, M., Guerra, F., & Passafiume, D. (2019). Psychological barriers to digital living in older adults: Computer anxiety as predictive mechanism for technophobia. *Behav Sci (Basel). 9* (9): 96. doi: 10.3390/bs9090096

Graham, R.C., Woodfield, W. & Harrison, I.B. (2013). A framework for institutional adoption and implementation of blended learning in higher education. *Internet and Higher Education.* Retrieved from https://www.researchgate.net/publication/313680006_A_framework_for_institutional_adoption_and_implementation_of_blended_learning_in_higher_education

Merriam-Webster (n.d.). Emerging. In *Merriam-Webster.com dictionary*. Retrieved April 30, 2024, from https://www.merriam-webster.com/dictionary/emerging

Mishra, P., & Koehler, M.J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teacher College Record. 108* (6) 1017-1054.

Naveed, S. (2023). *Emerging technologies*. Retrieved April 30, 2024 from https://www.researchgate.net/publication/370470843

Oliver, E. C. J., Perkins-Kirkpatrick, S. E., Holbrook, N. J. & Bindoff, N. L. (2018). Anthropogenic and natural influences on record 2016 marine heat waves. Bull. Am. *Meteorol. Soc. 99*, S44-S48.

Onyia, M.N. (2021). Digitization of education in Nigeria: A path to technological advancement. In 2021 Association for Digital Education and Communications Technology Conference Proceedings. Chapter 23.https://open.library.okstate.edu>di...

Paradigm Initiative (October 23, 2023). Policy briefs: Africa's absence in emerging technologies.https://paradigmhq.org/report/policy-brief-africas-absence-in-emerging-technologies/

Razak, W., Baharon, S., Abdullah, Z., Handon, H., Aziz, N., & Anuar, A. (2019). Academic Performance of University Students: A Case in a Higher Learning Institution. *KnE Social Sciences 3*(13):1294.

Rotolo, D., Hicks, D., & Martin, B.R., (2015 Dec). What is an emerging technology? *Research Policy. Vol. 44* (10), Pp. 1827 -1843. Retrieved from https://doi.org/10.1016/j.respol.2015.06.006

Sang, P. et al., (2020). Influencing factors of consumers' willingness to purchase green housing: a survey from Shandong Province, China. *Environ. Dev. Sustain. 22* (5) 4267-4287.

Superprof blog (2021). The Impact of technology on our educational system. https://www.superprof.ng/blog/ technology-education/

The Britannica Dictionary (2024). Emerging. In *The Britannica.com dictionary*. Retrieved April 30, 2024, from https://www.britannica.com/dictionary/emerging#

Uche, R.D. (2011). Dimensions of Technophobia – Technophila among senior staff members of the university of Calabar, Nigeria. *Global Journal of Educational Research, vol. 10* (1), pp.35-42. https://www.globaljournalseries.com

United Nations Economic Commission for Africa (19th September, 2023). The Potentials of emerging technologies in transforming Africa's digital landscape. https://www.uneca.org/eca-events/potentials-emerging-technologies-transforming-africas-digital-landscape-practical-use-cases-future

Venkatesh, V., Morris, M.G., Davis, G.B., & Davis, F.D. (2003). User acceptance of information technology: Towards a unified view. *MIS Quarterly, 27*(3), 425-478.

Wachira, M.A., Mail, S.K., Munyasi, J.W., Nzioka, M., Mwangi, D.M., Kaguthi, P.& Kithome, J. (2010). Uptake of improved technologies through dissemination by indigenous chicken service providers in Southern Rangeland of Kenya. In: *Proceedings at the 12th KARI Biannual Scientific Conference in November 2010, KARI headquarters, Nairobi, (Kenya Agricultural Research Institute, Nairobi),* pp. 1376-1382.

Winston & Strawn (2024). What is Emerging Technology? Retrieved April 30, 2024 from https://www.winston.com/en/legal-glossary/emerging-technology#:~:text=...