SKILLS ACQUISITION: TRAINING AND RE-TRAINING FOR ECONOMICS EDUCATION USING ARTIFICIAL INTELLIGENCE IN UNIVERSITIES IN RIVERS STATE

Joy Amesi
Department of Business Education
Faculty of Education
Rivers State University
Port Harcourt
Igwe Emmanuel Oluka-Nwafor
Department of Business Education
Faculty of Education
Rivers State University
Port Harcourt
Matilda Tamunomiebi Allison
Department of Business Education
Faculty of Education
Rivers State University
Port Harcourt

Abstract
As the world is rapidly evolving, the need for the integration of cutting-edge technologies like artificial intelligence has become increasingly important in shaping the future of education at the higher level. This work delves into the pressing need for Rivers State and indeed Nigerian universities to continually train and re-train lecturers using artificial intelligence, students will in turn benefit as it will empower them through the skills acquired to thrive in the dynamic job market as well as drive innovation across various sectors of the economy. The work looked at the need for training and retraining of university staff, artificial intelligence and economics education, constraints to training of lecturers using artificial intelligence, conclusion and then suggested that universities should collaborate with non-governmental organizations for training of lecturers on the use of artificial intelligence for effective and efficient utilization, government should make adequate provision of facilities to be available in every university for the training and retraining of lecturers on the use of artificial intelligence for academic productivity and finally, universities should ensure the participation of lecturers in artificial intelligence research and development.
Keywords: *Skills Acquisition, Training and Retraining, Economics Education, Artificial Intelligence*

Introduction

Education being a hub which connects different nations' sectors clearing path for desired prosperity through human and capacity development which is enabled via training and re-training of lecturers has played enormous role by redefining how best to learn in this present era. According to Afonughe, Onah, Uzoma, Andor and Orisakwe (2021), the renowned Professor Blaike opined that education is the biggest industry that touches on every fabric of our human endeavour, whose footings lies in educational activities which includes teaching and learning, being engineered by key stakeholders who are lecturers or instructors whom are engaged in instructional delivery of contents, assessment and grading of students learning outcome, career guidance and counselling services amongst others (Wood & Kimberly, 2012). Aiming to get these multiple tasks done by these lecturers in a shorter time is termed overwork, since the work exceeds the normal size of task needed in that office at a particular time (Mariappanadar & Ina, 2017). This situation has necessitated the need for training and re-training of lecturers in courses such as economic education using artificial intelligence in universities in Rivers State.

Artificial intelligence is described as an aspect of computer science that deals with the development of intelligent computer systems which are capable to view, analyze and react accordingly to the inputs. It is a known fact that human beings are seen as the most intelligent species on earth. The characteristics which have helped them to bag this title according to Moumita and Thirugnamam (2021), include the ability to think, apply logic, do reasoning, understand the complexity and make decisions on their own. Verma (2018)

defined artificial intelligence as that area of computer science that mainly focus on the making of some kind of intelligent machine that work and give reactions same like human beings. Similarly, Samah (2019) defined artificial intelligence as a field of computer science that studies how machines can imitate the intelligence of their human counterparts. Artificial intelligence plays a significant role in reducing the workload of humans and solving many complex mathematical and logical problems. If a system can have the basic skills like learning, reasoning, self-improvement, language understanding and solving problems, therefore, it can be viewed that there is the existence of artificial intelligence.

Artificial intelligence has been used and implemented in many fields, for an instance, in technology and is expected to provide 2.3 million jobs by 2020 (Kamble & Shah, 2018). It is a cutting-edge technology which has its impact in almost every field, such as business, healthcare systems or aerospace. Artificial intelligence can be seen as the method of simulation of human intelligence designed by humans. With the assistance of artificial intelligence, a well-equipped life is generated where the automated machine works for humans, saving their time and energy. There are many areas which contribute to artificial intelligence, these areas include statistics (used for handling huge data), computer science (used to run the algorithm for implementing concepts), mathematics (used for studying human mind and its behaviours), (Moumira & Thirugnamam, 2021). The basic aim of artificial intelligence is to provide more transparent, interpretable and explainable systems which can help to establish a better equipped system used as an intelligent agent. Artificial intelligence sometimes called machine intelligence is intelligence demonstrated by machines in contrast to natural intelligence displayed by humans and other animals (McCorduck in Robinson, 2018). This simply means that machines can be made to perform tasks commonly associated with intelligent beings like humans.

In Nigeria, basically, everything is done manually, in spite of the fact that we now live in a time where a lot of works are taken over by artificial intelligence. Hence, artificial intelligence has a key role to play in the world of technology of developing nations like Nigeria. According to Kumar (2018), in Nigeria, almost all the works are done manually by humans, therefore, causing several economic dangers due to poor production and poor technology inclination. However, artificial intelligence technology is efficient enough to reduce human efforts in various areas therefore, improving production and technology. Robinson (2018) opined that in developed countries, for production to be improved in various activities in the economy, artificial intelligence is mostly used to create machine slaves that perform various activities on a regular basis. For artificial intelligence to be utilized, individuals ought to be trained to acquire the necessary skills for artificial intelligence to be effectively productive.

Concept of Skill Acquisition

Skill acquisition is vital for the Nigerian economic growth, specially in this era of economic hardship. The ability to be trained on a particular task or vocation is referred to as skill acquisition. According to Idoko (2014), skill acquisition requires the gathering of various abilities that enhance task execution through the coordination of both theoretical and practical form of knowledge. No wonder Nwaukwa, Iloeje, Nzeh and Nwagu (2018) opined that the Federal Government of Nigeria recognized skill acquisition and development as a sustainable economic development. Training and retraining students with relevant skills is an important mandate of Business Education programme at the tertiary education level in Nigeria (Federal Republic of Nigeria, 2013). This is noted in the policy statement of National Policy on Education (FRN, 2013) which expressly stated that the primary goal of Business Education is to produce skillful and dynamic Business Education graduates for gainful employment or self-employment.

Based on the views of Nwaukwa, Iloeje, Nzeh and Nwagu (2018) and Idoku (2014), the researchers are of the opinion that Economics education students need to be trained and retrained in the acquisition of skill using artificial intelligence as the acquisition of skill using artificial intelligence will enable the students to be self-sustained upon graduation by using the skills acquired through training and retraining to make a living for themselves which would also be beneficial to both their immediate family and the society at large as training and re-training of lecturer's would increase academic productivity (Amesi & Sobere, 2023).

Lecturers are the pivot of work in the academic environment or institutions of higher learning. This explains why government take good steps in ensuring the effectiveness of lecturers. Lecturers provide ideas

and innovations and thereby academic excellence for students. These cannot be achieved if lecturers are not properly trained. Therefore, training and re-training has always been recognized as an important factor that contributes to improved performance of lecturers (Oyitso, 2015). Oyitso (2015) defined training as the acquisition of skills, knowledge and abilities to enable one function effectively and efficiently in the performance of one's job.

Training of lecturers is very important to the development and growth of any higher institution as it is meant for increasing the usefulness of the lecturers at the workplace. According to Adekoya (2012), the need for training lecturers in any institution is to develop and use their abilities for the achievement of academic goals and the fulfilment of individual job satisfaction. The Federal Government recognized the importance of training and re-training of workers at all cadres to the development of the nation, therefore the Federal Republic of Nigeria (2013) in the National Policy of Education as the demonstration of the government's commitment, section seven, sub-section four of the policy states that:

> For all classes, different kinds of in-service training courses and seminars related to their particular occupations will be arranged on a continuing basis so that all workers may attain proficiency in their work. (Federal Republic of Nigeria 2013 page 4).

As a result, the Nigerian government has made certain effort in establishing training centres such as the industrial training fund and administrative staff college of Nigeria to train skilled manpower to man the various sectors of the economy. The training is aimed at increasing workers efficiency and productivity level of organization and accelerates economic development in general.

On the other hand, re-training of lecturers involves the renewed or updating of lecturers' skills, knowledge, attitude, work habits and competencies to enable them perform their assigned responsibilities creditably (Imhabekhai in Oyitso, 2015). Imhabekhai in Oyitso (2015) further stated that re-training is a function of observed training needs and the amount of change which have taken place in the techniques of production. Training and re-training helps lecturers to become more confident in themselves and have a sense of belonging and commitment to the achievement of academic goal. Therefore, if lecturers receive the necessary educational and developmental opportunities necessary to perform their work well, they will not only work with dedication but will aspire to achieve excellence on the job (Ajileye in Oyitso, 2015).

Training and re-training of both old and new lecturers is not only aimed at promoting the ability of lecturers, but also to promote the good image of the institution as well as preparing lecturers for taking up higher responsibilities when the need arises. Training and re-training of lecturers can be done in the following ways: in-service training, conferences, workshops, seminars and demonstrations (Nkomo & Abdi 2023). The purpose of training and re-training according to OECD in Nkomo and Abdi (2023), is to update, develop and broaden the knowledge that lecturers has acquired during the initial teacher education. Onuekwa (2014) stated that today's ever-advancing technological world of work requires special skills and training which would enable university staff to fit into modern teaching conditions. Onuekwa (2014) equally stated that the functions of staff in recent time have expanded, hence, staff are expected to undergo more training to enhance their capacity in course delivery. Staff are expected to be retrained because most of them were trained with outdated machines and most times rely on the outdated experience gained throughout their career on the job to the best of their abilities.

Based on the views of Onuekwa (2014), Imhabekhai in Oyitso (2015) and OECD in Nkomo and Abdi (2023), the researchers are of the opinion that training and re-training of teaching staff in universities and in extension other higher institutions of learning in Rivers State will not only bring out the best in the academic performance of students as after the training, lecturers will practicalise what they learn with the students in class, but it will also boost the image of the institution in question as the institution will be ranked among the best, reason being that students graduating from the institution will be excelling in their different endeavours due to the quality of training they must have received from the institution. These training and re-training can also be best achieved with the help of artificial intelligence.

The Need for Training and Retraining of University Staff

The effectiveness of staff training will influence how successful the sector performs in achieving its goals. Therefore, every organization, be it educational, health or otherwise ought to make staff training,

retraining and growth a top priority. According to Banjiko in Jude and Bello (2022), staff training and re-training increase productivity as it helps universities reach their objectives. If universities are to succeed, staff need to be strengthened and trained. This is important as the ability of universities to produce qualified and competent graduates depends on staff (teaching and non-teaching). Singh and Mohanty (2012), opined that training and re-training is a crucial and effective tool for accomplishing organizational and academic goals. In view of that, the abilities and skills of staff are crucial to the success of an organization and these abilities and skills are primarily a result of their education and training (Dialoke, Ukah & Ikoro, 2016). Jude and Bello (2022) stated that training is a corporate initiative designed to assist staff in acquiring the fundamental knowledge needed for successfully carrying out the tasks for which they were hired.

Training and re-training are essential due to the quick changes in administrative settings, the automated workplace and the demands of diversity management as distinguishing features and emblems of globalization (Dialoke et al, 2016). Training plays a pivotal role in the effectiveness of an organization or institution as it is one of the most pervasive techniques for improving staff's performance and enhancing academic productivity in higher institutions of learning (Ogbu, Ojo & Ozah, 2018). Lecturers are indispensable asset and key element of gaining competitive advantage of any institution, therefore, training is an essential tool for its actualization. Universities provide training and re-training to optimize their lecturer's potential to prepare them to do their job as desired to attain the overall objectives. According to Kum, Cowden and Karodia (2014), when lecturers recognize their institution's interest in them through offering training programme, they in turn apply their best efforts to achieve institution's goals and show high performance on the job.

In order to meet with the global educational standard in universities, school management is involved in developing effective training and educational programme for their teaching staff to equip themselves with the desired knowledge, skills and abilities to achieve institutional goals. This struggle by the management would not only improve the teaching staff performance but would also create positive image of the institution. Therefore, effective training and re-training of lecturers will help to get acquaintance with the desired new technological advancement and gain full command on the competencies and skills required to economic education and to avoid on-the-job errors and mistakes with its adverse effect that will not only affect the institution and its students but the society at large.

Technological advancement has molded the need of capabilities and competencies required to perform a particular task, especially in the higher institutions of learning where it is expected that every innovative practice should start from (Ogbu, Ojo & Ozah, 2018). Training and re-training of lecturers provides the basic skills for enabling lecturers to develop their personal and institutional skills, knowledge and abilities to perform their jobs effectively, take on new responsibilities and adapt to changing conditions (Jones in Elijah, 2020). Lecturer's training and re-training is therefore necessary for the growth and prosperity of higher institutions as the more capable and qualified the lecturers, the better the performance of the institution. When lecturers are well trained, they can easily handle situations, particularly teaching of economics education and research in universities. For every lecturer to perform well, there is need to constantly train and re-train them. The right lecturer's training, development and education provides big pay offs for the lecturer in increases performance, knowledge, loyalty and contribution to general growth of the institution (Adeyorogu & Fagebe, 2019).

The effectiveness and success of an institution therefore rely on the quality of people who were trained and work within the institution. In recognition of the importance of training and re-training in an institution, management of Rivers State University, being research-based institution and training attached great importance to regular training and re-training of its lecturers. According to Elijah (2020), to underscore this importance, there is always a reasonable budget provision for training of lecturers with the support of Tertiary Education Trust Fund (TETFUND) 70 percent for teaching staff and 30 percent for non-teaching staff as training and re-training of university staff will enhance efficiency, effectiveness and perfection in economics education as well as other courses.

Artificial Intelligence and Economics Education

Education is one of the sectors that transforms the nation. Through the acquisition of education, especially economics education, the world is bettered as it helps in the transformation of man and the society. Through education too, artificial intelligence is developed. Artificial intelligence has helped lecturers and students worldwide to get access to the huge amount of data in the form of syllabus, curricula textbooks, research articles and papers (Hernandoz-Blanco, Herrera-Flores, Tomas & Navarro-Colordo in Moumita & Thirugnam, 2021). Lecturers can also benefit from artificial intelligence as it optimizes searches in Wikipedia or e-learning courses from various institutions. Artificial intelligence technology can make education system smarter in Nigeria as it can be done by introducing self-teaching classrooms at every level of the education institution. According to Robinson (2018), in classrooms, machines can be used to properly teach and answer on-the-spot questions in a university accepted manner. Truly, the modern era classrooms can be equipped with merging technological solutions to deliver the best learning environment to students. It can also collaborate with virtual networks to make a perfect learning environment for students as well as lecturers. Artificial intelligence not only help lecturers and student to craft courses that are customized to their needs, but it can also provide feedback to both the success of the course as a whole. Some schools, especially those with online offerings are using artificial intelligence systems to monitor students' academic progress. Through artificial intelligence systems, students get the support they need and for lecturers to find areas where they can improve instruction for students who may struggle with the course.

The concept of artificial intelligence has developed and is of great importance to the educational process; due to its ability to produce better outcomes. Elbrashy and Khalil (2023), opined that the impact of artificial intelligence extends to the development of the entire educational process, especially economic education by working to integrate artificial intelligence techniques that include display media and others. The digital and dynamic nature of artificial intelligence provides a different scope that cannot be found in the typical traditional school environment today (Saurabh & Topl, 2018). Application of artificial intelligence in economics education will enable the discovery of new frontiers of learning and accelerate the creation of innovative technologies (Abu-Zakih, 2018). Examples of application of artificial intelligence in education according to Elbrashy and Khalil, (2023) are:

1. Intelligent content: This is a group of companies and digital platforms that are currently interested in creating smart content by converting traditional educational books into smart books closely related to the educational goal.
2. Intelligent education systems: This is an educational programme that contain an element of artisanal artificial intelligence. The system tracks student's work and guides them whenever necessary by collecting information about the performance of each individual student. It can also highlight strengths and weaknesses. Each learner has the necessary support it provided to him at the appropriate time. One of the basic models in learning is the interaction interface model: its characteristics can be defined as follows:

a. Linking the student and the smart educational system on one hand, and the various parts and components of the programme on the other hand.
b. Giving the smart educational system the possibility of mixed, two-way dialogue between it and the student.
c. Integrating and including the student in the learning process through attractive presentation methods and means, flexibility and diversity of presentation of the educational material in a way that suits the student's individuality and requirements and interaction and dialogue with him in the natural language that he understands.
d. Providing various methods and patterns for questions and problems and ways to answer them in scientific reality.

The emergence of artificial intelligence in educational system marks a significant paradigm shift, changing the way information is accessed, presented and managed (Liua in Mustopa, Rikza, Hamidartun, Muhammad & Ahmad, 2024). Artificial intelligence not only provide a personalized approach to learning, but also allows lecturers to focus on more creative and interactive aspects of teaching (Popkovo & Gulzat, 2020). With the help of advanced data analysis, artificial intelligence can identify students' needs, craft skillful curricula and even provide instant feedback. Also, artificial intelligence technology enables the

development of innovative online learning platforms, opening the door for wider and more inclusive access to education (Nath & Sahu, 2020). Chen (2022) opined that by utilizing artificial intelligence, education can become more adaptive and responsive and meet the evolving demands of the society. Similarly, Mustopa, Rikza, Hamidatun, Muhammad and Ahmad (2024), stated that artificial intelligence offers the potential for a major transformation in learning methods, opening opportunities for more adaptive and personalized learning experiences. According to Ghnemat, Shaout and Al-Sowi (2022), integrating artificial intelligence into universities can create students who are skilled in mastering digital skills such as complex problem-solving, programming and understanding the latest technology. As stated by Liua, Salehb and Huang (2021), a knowledge of artificial intelligence can provide a strong foundation for students to face global challenges, stimulate innovation as well as prepare them to take on important roles in the knowledge-based economy.

Well trained robots can complement the role of experienced lecturer by providing private lessons and additional classes to strengthen and develop students' skills. (Robinson, 2018). Lecturers most times encounter challenges associated with office work, ranging from grading exams and evaluating assignments, artificial intelligence can take care of most of these tasks, taking the time needed for correction and administrative work to devote more time to students. It is expected that classrooms will soon move from the traditional framework of learning to using a combination of robots and artificial intelligence designed as needed. A good number of students would benefit from robots that are characterised by continuity and flexibility, especially in economics education classes.

In this period of globalization that is increasingly complex and full of challenges, having a good knowledge of the essential role of economics education as an integral part of the education curriculum is becoming increasingly real (Olssen, in Thao, 2023). Economics education refers to the process of teaching and learning economic concepts, theories and principles to understand the economy and its functioning (Buchanan, 2014). Economics education aims to equip students with analytical skills to make informed decisions about resource allocation and utilization (Mankiw, 2016). Economics education is not only about the present basic concept, but also creates a deep impact on the development of critical thinking, a deep understanding of market dynamics as well as analytical thinking skills (Thao, 2023). By including economics education in the school curriculum, students are giving the opportunity to become agents of change who think creatively as well as adapt in the event of complex economic situations (Bonal & Gonzalez, 2020).

The objectives of economics education according to Saunders (2018) are to

1. Understand economic systems and institutions
2. Analyze market structures and economic behaviour
3. Develop critical thinking and problem-solving skills
4. Apply economic concepts to real-world issues

Economics education is a systematic effort to provide knowledge and understanding to individuals regarding the basic principles of economics and its relationship to everyday life (Goyal & Kumar, 2021). In this instance, students not only receive lecture on economic concepts such as supply, demand and inflation, but are also lectured on the various types of economic systems such as capitalization and socialism (Singh, Paul & Tewari, 2022). Economics education is important as it leads to informed decision-making, it leads to economic literacy and critical thinking, prepares for careers in business, finance and policy as well as understand global economic issues and trends (Karper, 2017). According to Bowels and Carlin (2020), economics education provides a foundation through which students can analyze economic policies at the national and global level as well as develop analytical thinking skills necessary for the identification and formulation of solutions to economic problems. Through the understanding of economic ethics, students are taught to consider ethical implications in making economic decisions as well as provide a broader insight on the impact of these decisions on society.

The importance of supporting Economics Education cannot be overemphasized considering the challenges confronting future generations. Rapid economic changes, the impact of globalization and technological advances require that students have a solid knowledge of fundamental economic principles (Rehman, Radulescu, Ma-Dagar, Hussain & Khan, 2021). Pomi, Sarkar and Dhar (2021) opined that

economic education is not only about providing information but also forming students who are critical thinkers, analyzers and who are ready to face global economic challenges by making a positive contribution to sustainable economic development.

Based on the views of other researchers such as Abu-Zakih (2018), Robinson (2018), Elbrashy and Khalil (2023), the researcher is of the opinion that for teaching staff in universities to effectively teach economics education using artificial intelligence, there is need for them to be trained and re-trained on the usage of artificial intelligence, this is because with artificial intelligence, teachers can craft courses that are customized to their needs as well as monitor student's academic performance, although lecturers often encounter challenges in course of using artificial intelligence in teaching.

Constraints to Training of Lecturers Using Artificial Intelligence

The use of artificial intelligence in universities also involves challenges. Akinwalese and Ivanov (2022) explained the following as constraints to the effective training of teaching staff using artificial intelligence.

1. Output: One of the challenges confronting teaching staff in using artificial intelligence is output. Developers' decisions shape how the insights that artificial intelligence systems offer is instructed and interpreted. Some provide detailed information on various elements of students learning or behaviour that instructors and administrators can act upon. For example, one predictive analytic tool estimated that 50 percent of students in economic education class would not complete the semester, this was not news to the lecturers who still wondered what to do. It is important to understand in advance what to do with the information those tools provide (Sharma, 2021).
2. Comprehensiveness: There has been much discussion about this recently in terms of facial recognition. Researchers looking at the use of facial recognition by companies such as Google, IBM, and Microsoft have shown that in many cases, these tools have been developed using proprietary data or internal database on employee (Perera & Aboal, 2020). The tools are much more accurate for light-skinned men than light-skinned women. For instance, in one study, the facial recognition tools had nearly 100 percent accuracy for light-skinned women.
3. Implementation: Schools need to create very clear protocols for what lecturers ought to do when algorithmic evaluations do not align with their professional judgment. They must have clear criteria about when it is appropriate to follow or override computer generated insights to prevent unfair inconsistencies.
4. Adverse Outcomes: The use of artificial intelligence in universities also involve challenges. One of which is adverse outcomes. Despite the best intentions of those who develop and use these systems, there will be negative unintended consequences. To avoid these adverse outcomes, one of which is the data that these tools draw upon. The data can vary in quality, it may be old and outdated or it may be drawn from a subset of the population that may not align with the students being targeted. For instance, artificial intelligence learning systems that have been tested on students in a particular institution may not have the same outcomes or reflect the same accuracy for students in another part of the country. Similarly, an artificial intelligence system based on Generation X students may not have the same efficacy for native digital learners.
5. Accuracy: another challenge is accuracy as the models are based on correlations. They are not reflective of causation. The point of artificial intelligence tools and models is to show less intuitive, more attenuated correlations and patterns separately which correlations and patterns are accurate and which simply noise can be difficult.

Kennedy and Fox in Mostopa, Rikza, Hamidartun, Muhammad and Ahmad (2024) opined that challenges such as differences in technological infrastructure, inequality of access and sustainability of artificial intelligence implementation in cultural and social contexts need further attention to ensure that these technological developments provide maximum benefits to education.

Based on the opinion of other researchers such as Akinwalese and Ivanov (2022) and Kennedy and Fox in Mustopa, Ritza, Hamidartun, Muhammad and Ahmad (2024), the researchers are of the view that by understanding the challenges, universities can develop appropriate strategies such as providing access to

artificial intelligence tools, software and platforms as well as technical support to assist lecturers in implementing artificial intelligence in their teaching practices, encouraging collaboration among lecturers who are exploring artificial intelligence integration in teaching, creating a network where they can share experiences, tips and best practices, allowing lecturers the flexibility to tailor artificial intelligence tools to fit their teaching style and course objectives, promoting a more personalized approach to artificial intelligence integration to enhance the ability of lecturers to utilize the full potential of artificial intelligence in their teaching, thereby increasing their contribution to the overall development of artificial intelligence science and technology will help in ameliorating the constraints to lecture's usage of artificial intelligence.

Conclusion

Artificial intelligence and its related technology, like machine learning, deep learning amongst others has taken over the world as it is undergoing fourth phase of industrial revolution in a very strong way. It has put its remarkable impact on almost every sector, ranging from space technology, healthcare and even the education sector. The use of artificial intelligence for training and re-training of lecturers in the teaching of courses like economic education in universities is very necessary as it makes course delivery very smart and lively, thereby improving the productivity of lecturers which can also be seeing in the performance of students in their knowledge acquisition.

Suggestions

1. Universities should collaborate with Non-Governmental Organizations for training of lecturers on the use of artificial intelligence for effective and efficient utilization.
2. Government should make adequate provision of facilities to be available in every university for the training and re-training of lecturers on the use of artificial intelligence for academic productivity.
3. Universities should ensure the participation of lecturers in artificial intelligence research and development.

References

Abu-Zaki, K. M. (2018). Systems of expertise in artificial intelligence and their Application in teaching and education. *Journal of Faculties of Education, 12, 111-126.*

Adekoya, S. A. (2012). The effect of training and re-training on the performance and Productivity level of teachers in secondary schools in Egor Local Government Area of Edo State. *Unpublished project, University of Benin.*

Adeyoriju, R. & Fajebe, F. (2019). Training and manpower productivity in Nigeria Public sector. *Interdisciplinary journal of education, 2(1),27-39.*

Afonugha, E. , Ona, E. N, Uzoma, A. C., Andor, S. E. & Orisakwe, C. U. (2021). Integration of artificial intelligence tool (AI-chatbot) into teaching and learning A panacea for improving universities' educational and administrative duties in South-south Nigeria. *Journal of computer science and systems biology 14(6),1-6.*

Akinwalere, S. N. & Ivanov, V. (2022). Artificial intelligence in higher education:Challenges and opportunities. *Border crossing 12(1),1-15.*

Amesi, J. & Sobere, M.A. (2023). Business education curriculum implementation and skills acquisition among students in tertiary institutions in Rivers State. *Nigerian Journal of Business Education.* 10(2), 30– 38.

Bonal, X. & Gonzalex, S. (2020). The impact of lockdown on the learning gap: family and School divisions in times of crisis. *International review of education 66(5-6),635-655.*

Bowles, S. & Carlin, W. (2020). What students learn in economics 101: time for change. *Journal of economic literature, 58(1),176-214.*

Buchanan, J. M. (2014). What should economists do? *Journal of economic education, 45(2) 147-155.*

Chen, Y. M. (2022). Understanding foreign language, learners' perceptions of teachers' Practice with educational technology with specific reference to kahoot and padlet: A case from China. *Education and information technologies, 27(2),1439-1465.*

Dialoke, I., Ukah, F. O. & Ikoro, E. I. (2016). Implications of training and manpower Development on employee productivity. *International journal of economics and Business management, 2(4),30-39.*

Elbrashy, T. E. & Khalil, M. K. (2023). The impact of artificial intelligence applications in Education on achieving economic development. *Journal of Research in Humanities and Social Science,11(10),143-148.*

Elijah, O.Z. (2020). Effect of employees training on performance of academic staff of some selected tertiary institutions in Nasarawa State. *African Journal of Social Sciences and Humanities Research 3(6),65-77.*

Federal Republic of Nigeria (2013). *National Policy on Education* (6th Ed). Lagos: NERDC Press.

Ghnemet, R., Saout, A. & Al-Sowi, A. M. (2022). Higher education transformation for Artificial intelligence revolution: transformation framework. *International Journal of Emerging in Learning, 17(19),224-241.*

Goyal, K. & Kumar, S. (2021).Financial literacy: A systematic review and bibliometric analysis. *International Journal of Consumer Studies 45(1),80-105.*

Idoko, C. U. (2014). Skill acquisition and youth empowerment in Nigeria. *Global Journal of Commerce and Management Perspective, 3(1),51-54.*

Jude, A. & Bello, O. A. (2022). The impact of training and re-training in promoting Manpower development among Local Government employees of Oredo Local Government Council, Edo State. *Sapientia Global Journal of Arts, Humanities and Development Studies, 5(3),23-34.*

Kamble, R. & Shah, D. (2018). Applications of artificial intelligence in human life. *International Journal of Research, 6(6), 178-188.*

Kasper, W. (2017). Economics for tomorrow: A framework for economic education. *Journal of Economic Education, 48(2),123-135.*

Kum, F. D., Cowden, R. & Karodia, A. M. (2014). The impact of training and development on employee performance. A case study of ESCON consulting. *Singaporean Journal of Business Economics and Management Studies, 3 (3),7-15.*

Kumar, M. (2018). Is human being the most intelligent and wise among living beings? *Retrieved on 17th May 2024 from www.researchgate.net/post.*

Liua, Y., Salehb, S. & Huang, J. (2021). Artificial intelligence in promoting teaching and learning transformation n schools. *Retrieved on 17th May 2024 from https:/doi.org/10.53333/ijicc 2013/5369.*

Mankiw, N. G. (2016). *Principles of economics* (8th ed) Cengage learning.

Mariappanadar, S. & Ina, A. (2017). "The dark side of overwork: An empirical evidence of social Harm of work from a sustainable HRM perspective. *International Studies Management Organization 47:372-387.*

Moumita, G. & Thirugnanam, A. (2021). Introduction to artificial intelligence. *Retrieved on 23rd May 2024 from researchgate.net.*

Mostopa, N, Rikza, C., Hamidartun, N., Muhammad, R. H. & Ahmad, M. (2024). Challenges in Artificial intelligence development in higher education in China, India and Indonesia:International students' perspectives. *International journal of learning, teaching and Educational research, 23(2),354-373.*

Nath, R. & Sahu, V. (2020). The problem of machine ethics in artificial intelligence. *Retrieved on 24th May 2024 from https://doi.org/10.1007/s00146-017-0768-6.*

Nkomo, N, N. & Abdi, U. M. (2023). Impact of training and re-training teachers in primary and post-primary schools for better performance. *International research journal of Educational research, 14(3),1-6.*

Nwaukwa, F. C., Iloeje, E., Nzeh, O. A. & Nwagu, E. C. (2018). Training needs of Business Educators and entrepreneurial skills acquisition by Business Education undergraduates For sustainable development. *Merit Research Journal of Education and Review, 56(2),43-53.*

Ogbu, J. O., Ojo, G. R. & Ozah, J. P. (2018). Effects of training on academic staff performance. A study of Federal Polytechnic Nasarawa. *Bingham Journal of Economics and Allied Studies, 1(2),1-10.*

Onuekwa, F. A. (2014). Assessment of training needs of Business Education teachers in Tertiary institutions in Rivers State. *An unpublished dissertation. Rivers State University, Port Harcourt.*

Oyitso, M. O. (2015). Training and re-training as a tool for promoting workers productivity in Nigeria. *Sokoto educational review, 16(2),47-57.*

Pomi, S. S., Sarkar, S. M. & Dhar, B. K. (2021). Human or physical capital which influences Sustainable economic growth most? A study on Banglasdesh. *Canadian journal of Business and information studies, 3(5),101-108.*

Peart, A. (2017). "Homage to Jogn McCarthy, the father of artificial intelligence (AI)". *Retrieved On 23rd May 2024 from https://www.artificial solutions.com/blog/homage-to-john- Mccarthy-the-father-of-artificial-intelligence.*

Perara, M. & Aboal, D. (2020). The impact of a mathematics computer-assisted learning Platform on student's mathematics test scores. *Retrieved on 19th May 2024 from https://doi.org/10.1007/40593.016.0122.*

Rehman, A., Radulesus, M., Ma, H., Dagar, V., Hussain, I & Khan, M. K. (2021). The Impact of globalization, energy se and trade on ecological foot print in Pakistan: Does environmental sustainability exist? *Energies, 14(17),5234.*

Robinson, R. N. (2018). Artificial intelligence: its importance, challenges and applications in igeria. *Direct research journal of engineering and information technology, 5(5),36-41.*

Sarmah, S. S. (2019). Concept of artificial intelligence, its impact and emerging trends.*International research Journal of Engineering and Technology, 6(11),2164-2168.*

Sarma, Y. (2021). Boost to university-industry AI research collaboration. University world news. *Retrieved on 14th May 2024 from https://www.universityworldnews.com/post.php?Stony=20181012084845359.*

Saunders P. (2018). *Economics and financial literacy: A guide for teachers*. Routledge. Saurabh, J. & Topi, E. (2018). "Information and artificial intelligence". *Journal of the American College of radiology, 15(3),509-511.*

Shukla, S. S. & Vijah, J. (2013). Applicability of artificial intelligence in different fields of life. *International Journal of Scientific Engineering and Research, 1(1),28-35.*

Singh, R. & Mohanty, M. (2012). Impact of training practices on employee productivity.A comparative study. *Inter-Science Management Review, 2(2),87-92.*

Singh, D. R., Paul, J. & Tewari, V. (2022). The soft skills gap: a bottleneck in the talent supply in Emerging economies. *The International Journal of Human Resource Management, 33(13),2630-2661.*

Thao, N. T. P. (2023). The importance of economic education: preparing future generations For global economic challenges. *Journal of Asian Multicultural Research for Eeconomy and Management Study, 4(4),31-35.*

Verma, M. (2018). Artificial intelligence and its scope in different areas with special reference. To the field of education. *International Journal Of Advanced Educational Research, 3(1)5-10.*

Wood, W. B. & Kimberly, D. T. (2012). "The role of the lecturer as tutor, doing what effective Tutors do in a large class". *CBE-Life Science Education, 11, 3-9*