

ADOPTION OF ARTIFICIAL INTELLIGENCE IN BUSINESS EDUCATION AND SCHOOL ADMINISTRATION

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ABSTRACT

Due to the growing presence of artificial intelligence in developed countries, this paper looks at the adoption of artificial intelligence for effective academic and administrative tasks. The paper describes the concept of artificial intelligence while tracing its origin. It further established the benefits of adopting artificial intelligence in the academic and administrative tasks which include user-friendly, infinite functions, ability to take complex work among others; and the challenges to be faced with if artificial intelligence application is been adopted, the challenges might include financial uncertainty, job loss, technological disadvantages among others. The paper concluded that the adoption of artificial intelligence in business education will be setting a new level of efficient and effective service delivery in business education department. The paper recommended that government and concerned agencies must come together to proffer the way forward to meet up with the latest standard of the use of artificial intelligence in business education and its administration. Academic and administrative staff should be exposed to training and retraining in the use of artificial intelligence in delivering of services among others.

Keywords: Artificial intelligence, Business Education, School Administration adoption

INTRODUCTION

The origin of Artificial Intelligence can be traced to John McCarthy's research in 1956, with the assumption that every aspect of learning and other forms of intelligence can be stimulated through the use of a machine (Wang, 2018). Artificial Intelligence was first mentioned by John McCarthy at a conference in 1956. John McCarthy proposed the use of the term artificial intelligence to describe computer with the ability to mimic or duplicate the functions of the human brain (Ralph and George, 2010). Scholars have defined the concept of Artificial Intelligence. According to Benhamou and Janin (2018) Artificial Intelligence involves a collection of technologies that enable machines to act with a very high level of intelligence similar to humans. Merriam-Webster English Dictionary (2018) stated that artificial intelligence is "a part of computer science that deals with giving ability to the machines to look as if they have natural human intelligence". Ralph and George (2010) described artificial intelligence as a cluster of technologies, and various computing science approaches to make flexible rational decisions that align with unpredictable environmental conditions. Artificial intelligence is gradually transforming every facet of our economy, such as the healthcare, energy, agriculture, finance, manufacturing, education sector etc. Artificial Intelligence can be used to play a major role in shaping the growth of some core sectors in Nigeria economy. The adoption of Artificial Intelligence in business education and school administration will help the universities meet up with global digitalization faster. Artificial Intelligence is considered a tool for sustainable development (Ralph and George, 2010). In the conference, there was this prediction that computer will be as smart as humans by 1960. Although the prediction is said not have been realized. However, the Singularity Institute for Artificial Intelligence (SIAI) is playing critical role in advancing humanity's understanding of the profound promise and peril of strong Artificial Intelligence.

According to Ralph and George (2010) Artificial Intelligence systems includes the people, procedure, hardware, software, data and knowledge needed to develop computer systems and machines to display features of Intelligence.

Administration in any setting or organization is to coordinate the effort of people towards achieving the stated goals of the organization. School Administration is therefore the systematic arrangement and coordination of people and materials to achieve the objectives of the school (Robert-Okah 2014). School administration is considered one of the most important areas of administration and the greatest one in the community, which role is no longer limited to implementation of educational policies and objectives but has also become responsible for raising students and qualifying them to meet up with technological challenges in this era. School administration keeps in direct contact with the community, provides it with care and education, and proper environment that would academically qualify students to go into the world of work, this eventually leads to the progress of society and upgrades its level (Zahran, 2012). The importance of school administration lies in the influence and changes made in the students' behaviors through the practice of behavioral function in several aspects like belief in the objectives of the school, the willingness to work for the school and being proud of it and unwilling to leave it (Hulpia and Devos, 2009). The school administration continuously follows up the students' issues and problems, monitors and provides solutions (Faulkner, 2015).

According to Alabi (2021) business education is part of the total educational programme. It is an aspect of vocational education. Business education has been known in the history of education in Nigeria. Business education is significant in the nation's development as it develops vocational skills, attitude and knowledge for employment and advancement in business career. Business education is a course offered in universities and colleges of education. It gives the mastery of teaching business courses. It is the acquisition and development of skills and competencies, attribute and attitudes which are essential for effective economic system. This position was backed up by the national policy on education which emphasized the acquisition and development of appropriate skills and the development of the mental, physical and social abilities and competencies as attributes for individuals to live in and contribute to the development of the society (Federal Republic of Nigeria, 2004). The introduction of business education programme in tertiary institute is not just a welcome development but a step towards solving economic problem through imparting skills, knowledges and attitudes into the learners for job creation and employment opportunities. Business education also focuses on the retraining of workers who find their skills outdated as technology changes. This retraining allows workers to have contemporary skills for the jobs and thereby lead to competency in their jobs and the economy of the country at large. The attainment of competencies leads to the achievement of the needed vocational development right from the secondary school level. In all, the recipient will be equipped with the appropriate attitude, knowledge and skills to contribute in the labor market (Koko, 2011). The aims of business students according to Koko, 2011 are the following;

- To introduce students to the world of business.
- To expose students with key business topics.
- To enlighten students with numerous activities that take place in the Nigerian business sector.
- To provide students with a wide understanding of various business ideas in connection to science and technology.
- To strengthen the student's capacity to improve his or her business management skills.

Based on the definition of business education and its objectives, artificial intelligence is highly needed in order to perform academic and administrative functions faster and efficiently. Therefore, the adoption of artificial intelligence in business education is long overdue.

Concept Of Artificial Intelligence

Artificial Intelligence is sometimes called Machine Intelligence, it is an Intelligence displayed by machine as opposed to natural Intelligence demonstrated by human and animals (Mc Corduck, 2004). This means machines performance task like intelligent beings and animals. Artificial Intelligence is an area of computer Science with the help of digital electronics that emphasizes the creation of Intelligent machines that work and react like humans. Artificial Intelligence are

embedded with the ability to reason, make meaning, generalize or learn from past experiences. It has been noticed that computers can be programmed to handle very complex task since it was developed in the 1940s. it helps in discovering proofs for mathematics theorems and playing chess with great proficiency. Artificial Intelligence has been studied for years and it is still seen as one of the most challenging subjects in digital computer. Nevertheless, it has created wave all over the world. The main goal of artificial intelligence is to create technology that allows computers and machines to function in an Intelligent manner. According to Mc Corduck (2004) the intelligence of artificial intelligence has been broken down to particular traits, which as learning, reasoning, problem solving, perception, translation between languages, planning and speech recognition. The aforementioned traits have received most attention in Artificial Intelligence technology.

Artificial Intelligence in the educational sector has influenced Students, administrative staff and lecturers. Artificial Intelligence application are in wide use by educators and learner from nursery to tertiary education level. Some of the tools and technologies used are teaching robots, Intelligent tutoring systems, and adaptive learning system and such applications are adaptive skill building, scheduling career education and many other.

Some Branches of Artificial Intelligence

According to Ralph and George (2010). Artificial Intelligence has several specialty areas, such as (1) expert system (2) robotics (3) vision system (4) natural language processing and voice recognition (5) learning systems and (6) neural networks.

- 1) **Expert Systems:** An expert system consists of hardware and software that stores knowledge and makes inferences, similar to those of a human expert. Expert system can do the following:
 - i. Provide expertise needed for training and development to share the wisdom and experience of human experts with many people. Expert system will be an easy way to get across to many students in the teaching and learning process. Expert system provide suggestion for spelling and error in google search engine.
 - ii. Develop solution faster than human experts.
 - iii. Provide expertise that is rare.
 - iv. Capture and preserve irreplaceable human expertise.
 - v. Develop system more consistently than human expertise.
 - vi. Solve a problem that is not easily solved when using traditional programming technologies.
- 2) **Robotics:** Robotics is an interdisciplinary field of science and engineering with mechanical engineering. Computer Science and many others. Robots are deployed to conduct tasks that might be laborious for humans to perform steadily. Robotic has many applications.
- 3) **Vision Systems:** Another area of Artificial Intelligence is Vision System. Vision System includes hardware and software that permit computers to capture, store, and manipulate visual images. This feature can search huge database of fingerprints in very high speed. It performs fingerprints analysis with almost the sample Vision level of precision as human experts. Vision System are also effective at identifying people, based on facial features. Visual System save time and cost.
- 4) **Natural Language Processing and Voice Recognition:** Natural language processing allows computer to understand and react to statements and commands made in a natural language such as English. For example, google has service called Google Voice Local Search that allow one to dial a toll-free number and search for local business using voice commands and statements. Natural language processing system corrects spelling mistakes, convert abbreviations into words and commands, and allows people to ask question in English. In some instances, voice recognition is used with natural language processing. Voice recognition involves converting sound waves into words. After converting sounds into words, natural language processing systems react to the words or commands by performing a variety of tasks.

- 5) **Learning System:** learning System is another branch of Artificial Intelligence; it is a combination of software and hardware that allows a computer to change how it functions or reacts to situations based on feedback it receives. For example, some computerize games have learning abilities. If the computer does not win a game, it remembers not to make the same move under the same condition again. Learning System software requires feedback on results of actions or decisions.
- 6) **Neural Network:** Neural Network is an increasingly important aspect of Artificial Intelligence. Neural Networks is also called Neural Net. Neural network is a computer system that can act like or simulate the functioning of a human brain. It uses parallel processors in a structure that is based on the human brain. Furthermore, neural networks can process many pieces of data at the same time and learn to recognize patterns. This branch of artificial intelligence can help in the payment of fees in schools that have high population of students. So that their names will not be entered each time they want to make payment or register for things continuously in the school rather password or pins will be used.

Artificial Intelligence in Education

Education is one of the most important sectors in Nigeria that touches everybody regardless of age and location. Artificial Intelligence technology can make business education and its administration smarter. This can be achieved by introducing self-teaching classroom, machine can be used to properly teach and answer questions in a universally accepted manner. The 21st century business education classroom can be equipped with emerging technological solutions to deliver the best learning environment for students and lecturer. Using Artificial Intelligence in education can drastically change the way business education and its administrative staff use their time and the manner in which students are taught individually (Li et al, 2019).

Artificial Intelligence Applications assists educational sector in two ways, which are:

- Administrative level
- Academic level.

Artificial Intelligence can be adopted in business education in areas such as the admission process, providing counselling, library services, assessment, feedback, tutoring etc. Different types of assessment, behaviour pattern and many other elements can be obtained and assisted through artificial intelligence (Chen et al, 2020). Lecturers usually perform tasks like teaching, grading and evaluation of students. These tasks overlap each other. Administrative tasks are also time and resource consuming. Some information are administrative ones while some are academic ones. Artificial Intelligence is a welcome development in business education and school administration because many tasks on education depends upon the information about students.

The Artificial Intelligence based system is used for the analysis of job application, it also helps the human resource department in managing applications properly. Such tools automatically set criteria for the desired candidate and information gathering which provides guidelines for interviews, etc. (Gobert et al. 2019). Some transformation Artificial Intelligence has made is Grading/Assessment (GA), Admission (A). Learning Analytics (LA) and Personalize Education (PE).

Artificial Intelligence in Grading/Assessment

According to Redcay and Schilbach (2019) Assessment of students basically entails collecting, interpreting, analyzing and acting on information about the students' performance with respect to learning goals. Educational Institutions use standard based assessments which is beneficial for grading. Another type of assessment is learner centered measurement model, which are most formative and beneficial for the guidance of institution and for supportive learning of students. Computer-based application are used for purposes of assessment currently and this can be adopted in business education in other to facilitate effective assessment of students. These artificial intelligence applications not only give a rapid assessment of large numbers of students but also give the same standards without any bias. These applications also minimize workload of lecturers,

assist the lecturers and also provide time for other tasks. After covid 19 pandemic, most educational institutions have shifted their operation to online learning system like learning management systems, MOOC, MOODLES, etc., and it is very difficult for lecturers to handle everything online, especially the assessment of assignments, quizzes and answer scripts (Khan and Jawaid, 2020). Automatic assessment or grading systems are one of the solutions to address the problem. This therefore means that Artificial Intelligence application can be used in the students' performance assessment and grading in business education administrative tasks. It will drastically increase impartiality and effectiveness in assessing students compared to the traditional type of assessment.

Artificial Intelligence Application in Admission

Artificial Intelligence started in the educational sector from advertising admission on websites and the application expert satisfactory services like consultation and information relating to the admission (Kim, 2014). In today's Information Communication Technology era most institutions are providing the necessary services to be given to applicant through web-based service systems. Websites provide a lot of help in the admission process and decrease the question answering burden on admission staff and department, chatbot provides services round the clock without any assistance from human. Artificial Intelligence tools are helpful in admission process of any educational institution. The admission process currently begins with the submission of an online application to the school. It is not easy to handle such application in a short period of time and therefore Institutions use Artificial Intelligence tools in the form of chatbot. Chatbot are technology-fueled virtual assistants and it stems from established and written scrips or artificial intelligence. It works 24/7 by providing necessary knowledge and answers related to admission; it is not only helpful to admission seekers but also reduces the on the admission staff. Artificial applications and tools are not replacing the existing staff of any educational institution but rather assisting them in handling the flood of applications during the admission process. Such tools can be used in business education administrative section in order for works to be done faster

Artificial Intelligence in Learning Analytics

According to Strickland (2021) Learning Analytics (LA) is the measurement, collection, analysis and reporting of data about learners and their context, for the purposes of understanding and optimizing learning and the environment which learning takes place. Learning analytics is essential in education basically to get a better understanding of teaching, personalization, adaptation and intelligent content. After the emergence of big data concept, analytics has the capabilities to increase the productivity of an organization and enhance competition. Development of artificial intelligence and its application in education has motivated the educators to collect and analyze the data and put solutions to many issues and challenges in education. The data collected and recorded when the students use social media, LMS, MOOC, etc., their clicks on various buttons, navigation, the time they spent on a task, everything can be tracked and used by analysts to evaluate the teaching environment and enhance it (Kiron et al, 2021).

In education, Analytics is important and necessary at different levels like department and classroom. At each level, it gives different outputs for the betterment of education. In classroom, it gives information about the students' interest, social networks, intelligence level, grades, etc. At department level, it gives the statistics about the department like risk, intervention support services, and guides what to do and what not to do for each level, there is a need for different type of data sets depending upon the objectives and contexts of the analytics. Analytics learning calls for Personalized Education, where students learn according to their levels. This means with the use of Artificial Intelligence Systems, learning can be adjusted according to the requirement of each student, teachers easily handle more students in classroom as it enables a differentiated level. Artificial Intelligence transforms the education sector in terms of smart contents. Smart content refers to digitalized books, videos lectures, lecturer notes etc. Smart content makes accessing education easy, because it can be contacted remotely and individually unlike physical

classroom environment. Smart contents increase the students learning and assist teachers in transmitting knowledge. It will be of great benefit if personalized learning will be adopted in teaching students in business education.

Artificial Intelligence in School Libraries

Artificial Intelligence has provided solutions to challenges facing libraries, such as shelving of books and other library materials among others. This has made library services to be done in more effective and efficient manners for improved user satisfaction. This therefore enables library users to access timely and accurate information quickly and promptly. According to Tella (2020), there is need for academic libraries to reposition themselves to take relative advantage of artificial intelligence's potentials by refining the quality of library services in this era of information age. Similarly, Wang (2018) emphasized the need for universities libraries generally and business education library in particular to embrace Artificial Intelligence technologies to provide better services to researchers, students and other library uses. This simply implies that the adoption of Artificial Intelligence in business education library will enable users of the library to have better services.

Benefits of Artificial intelligence in Education

Reducing the workload of Lecturers

One major opportunity for in Artificial Intelligence in education is the role that Artificial Intelligence can play in solving workload related problems experienced by lecturers. In recent years, the lecturers have often shown dissatisfaction with the high workload experienced in education. This increased workload is partly due to the additional administrative tasks that lecturers have been given with the existing range of tasks as well as due to the reduction of new teachers entering the workforce. Artificial Intelligence can support the lecturer by automating (administrative) tasks in order to reduce the workload.

Tasks that we expect Artificial Intelligence to be able to automate and/or facilitate in the near future are mainly related to proofreading (e.g., highlighting strengths and weaknesses in an essay, after which the instructor primarily assesses these points) and the composition of the course material (with the help of automatic classification of content).

Personalized learning

The application of Artificial Intelligence in personalized learning is considered a great opportunity. Lecturers have limited time and attention and therefore cannot teach each student individually. Artificial Intelligence does not have this limitation. This allows an Artificial Intelligence to better align education with the wishes of the students. As a result, the teacher is better able to focus his or her attention on 'problem students', and the student goes through the curriculum at his or her own pace and level. The automation of tasks will proceed steadily. We expect that it will start with performing small tasks such as selecting and practicing course material. Improvements within adaptive learning systems through the implementation of deep learning algorithms could aid in these tasks.

Supporting the teacher with data-driven insights (learning analytics)

Artificial Intelligence can support the lecturer by combining data and making it interpretable. With these learning analytics, the teacher can gain holistic and well-founded insights into students. Artificial Intelligence can expose cognitive biases and thus make education fairer with regard to ethnicity or gender for example. For example, an Artificial Intelligence who is not aware of ethnicity or gender cannot take these variables into account in the school advice. It is known that students with a non-western migration background generally receive lower school advice than native-born students. An Artificial Intelligence can correct possible (unconscious) prejudices of a lecturer.

Improved assessment

In the field of assessment, Artificial Intelligence can enable a shift from periodic assessment to continuous assessment. One major criticism of standardized tests is that they are merely snapshots and not a good representation of a student's knowledge. With Artificial Intelligence, the knowledge level of a student can be continuously monitored without the necessity of periodic tests.

Synergy with other digital learning applications

Finally, Artificial Intelligence can increase the effectiveness of existing digital learning resources by replacing a manually programmed rules with rules learned by an Artificial Intelligence. In combination with new technologies, such as virtual reality (VR), augmented reality (AR) and serious games, synergy can take place through the application of Artificial Intelligence. These technologies create a virtual space that can be fully controlled, so that the learning outcomes can be optimized. A possible risk here is that knowledge gained in a virtual environment is generalized to a limited extent to 'the real world', and that other, less formalized knowledge acquired by a student at school (for example on a social level) gets less attention.

Challenges of Artificial Intelligence**Fear of artificial intelligence jeopardizing the objectives of education if the emphasis is on technology alone.**

If the development of Artificial Intelligence is mainly focused on data/technology, there is a risk that Artificial Intelligence applications will no longer be in line with educational objectives. For example, it is possible that an Artificial Intelligence that is optimized for knowledge transfer cannot have incorporated other elements such as motivation. It is not self-evident that these actors have the same educational goals in mind. As a result, educational objectives may lose control.

When education is fully automated and students go through the educational process without the intervention of people, one may wonder whether education will not become inhumane in this way. This risk increases when simulations are used excessively for teaching. There is a chance that knowledge and skills learned in a simulation cannot be applied in the real world.

Bias in humans translated to data and incorporated by Artificial Intelligence

A major risk when deploying Artificial Intelligence relates to the data available for training models. In addition to the availability of data, there is also the risk that the data that is available contains human biases. There is a risk here that Artificial Intelligence will inherit and even reinforce these biases. This can lead to a feedback loop that structurally disadvantages certain minorities.

The labour market for lecturers

There is a risk that lecturers may need new skills to use Artificial Intelligence responsibly. Currently, data-driven education is not part of lecturers training, while Artificial Intelligence does expect the user to have at least basic digital skills. If lecturers cannot keep up with this development, there is a chance that the lecturer of the future will be a data scientist with a less strong educational background. However, the risk that 'the lecturers' will be automated is very small. If an Artificial Intelligence is to be able to take over all the tasks from a lecturer, a form of Artificial General Intelligence is required, which we have found to be unrealistic in the near future (Grace et al. 2018).

Dependency on black-box models versus the responsibility of lecturers

There is a risk that education will become dependent on artificial intelligence systems that we do not fully understand. Both lecturers and Artificial Intelligence need to change in order to overcome this risk. Both the explainability of machine learning models and the knowledge of teachers (in relation to Artificial Intelligence) must be increased in order to overcome this risk. A lecturer cannot take responsibility for systems that are incomprehensible.

Applying artificial intelligence without preparation

So many conditions need to be met before Artificial Intelligence can be successfully applied in education. For example, technical infrastructure and data are required before Artificial Intelligence can be applied. If Artificial Intelligence is adopted quickly, there is a chance that the Artificial Intelligence will not be able to meet expectations. Thereby, Artificial Intelligence, just like other innovative learning tools, will not achieve its objectives. This can eventually lead to an aversion to Artificial Intelligence in education and may also hinder other (digital) innovations in this domain. In addition, there are a number of legal obstacles (often with good reason) that make it impossible to implement Artificial Intelligence overnight without readiness for its adoption.

Fear of power shift

There are concerns that the introduction of Artificial Intelligence will consolidate power with one entity. This entity can be an existing publisher of educational resources or a tech giant. However, recent developments seem to indicate that this risk is manageable. A recent ruling has confirmed that the ownership of data generated in digital educational resources is the property of the school, and not necessarily of the developer of the educational resources. However, it remains a concern for policy makers.

Insecurity Issues

While artificial intelligence offers enormous benefits to teaching and learning, its proper functioning relies on the collection and analysis of personal data of students and faculty members in educational programmes. The collection of such confidential information raises serious issues of privacy and data protection. Safety and security issues regarding Artificial Intelligence -based systems revolve around concepts such as safe Artificial Intelligence for use by humans, verification, validation, self-awareness in adversary prone environments.

As artificial intelligence systems become more integrated into teaching and learning, participants of educational programmes will be more exposed to unintended risks as other people could gain unauthorized access to their otherwise private lives, among other potential problems. Furthermore, since Artificial Intelligence relies on data, its outcome and subsequent use are as good as the data put into it. Where the given data provides for a chance of having a misleading outcome, there is a high chance that Artificial Intelligence could bring about serious problems to that effect.

CONCLUSION

Artificial intelligence has influenced many sectors and education is one of them. It is a contemporary method of tutoring or teaching and learning, which can address and resolve many issues related to learning. It can resolve issues, such as content accessibility, teacher deficiency where a student can learn without stress or impacting others. Artificial Intelligence implementation and adoption is unavoidable in business education. This paper provides a strong argument for the adoption and use of artificial intelligence application in business education. It also offers education policymakers guidance about the importance and role of artificial intelligence application in education and how many issues can be addressed through it. It also provides educational institutions, lecturers, and students with knowledge about how to use artificial intelligence application, where to use it, and when to use it. Each of the parties can use the study differently according to their needs and requirements. It also enlightens the educators as to how of artificial intelligence application is changing the education world and how it can assist risky tasks. Artificial intelligence and its use in many segments of our normal lives appear to be growing day by day, and the same has been reported in various studies. In the field of education, artificial intelligence began to exert its influence, acting as an auxiliary tool to support the administration and academic process of universities. This paper shows that lecturers and students should understand more of application of artificial intelligence to benefit students and staff in the development of their skills in business education. Several platforms and trends promised the future development of artificial intelligence in education, which is very attractive, and in some cases even inaccessible under

certain conditions. However, learning from computer systems is unlikely to be fully capable of replacing human teaching in schools

Suggestions

It seems obvious that the application of Artificial Intelligence in business education can have a positive impact in various areas. Therefore, the following suggestions are made:

- 1) Academic and administrative staff should be exposed to training and retraining in the use of artificial intelligence in delivering of their services in order to achieve improved operational efficiency in business education department where the technology is to be adopted.
- 2) There must be proper policy formulation and implementation prior to, during and after the adoption of artificial intelligences.
- 3) Libraries in business education department should intensify efforts in adopting artificial intelligence in the delivery of the libraries' services for libraries users to gain very high-level satisfaction
- 4) Government, individuals, alumni and management of business education must come together to proffer the way forward for artificial intelligence applications to be provided in the department to enable academic and administrative works to efficient and faster.

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