Ways Artificial Intelligence Will Shape eLearning

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Abstract

The paper seeks to highlight the significance of artificial intelligence (AI) in eLearning. The research problem for analysis is how eLearning and the use of artificial intelligence make education more accessible and cost-effective. Therefore, the research investigates whether Artificial Intelligence in the e-learning will improve the quality of education offered in various universities. The method used to address the problem is a theoretical lens and quantitative research that investigates the significance of Artificial intelligence in e-learning. The study indicates that artificial intelligence in eLearning provides learners with skills without looking for an instructor. The artificial intelligence machine provides relevant information that prepares a learner in the workplace environment. The significance of the research project is making education more accessible and improving the lives of disabled persons.

Keywords: Artificial Intelligence; web-based learning; chatbots and Seeing AI.

1. Introduction

The cost of higher education keeps on rising as students endure the burden of choosing a preeminent major and accredited institution that will offer quality education and success in the future. The millennials or adult learners search alternative on-campus programs and full-time course while universities are seeking a non-traditional method of learning.

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The traditional full-time and on-campus programs are tedious, and the hard economic moments require active individuals working in various institutions so that they can sustain their livelihood. Distance programs began in the 1980s, but innovation and content scalability have made online educational programs to be more competitive for students. Currently, students can enroll for bachelor's or master's programs in various learning institutions and complete the program in their homes. Importantly, the virtual program or e-learning saves tuition fees approximately by 25-50 percent [1]. The Georgia Institute of Technology is a public university that has democratized education through the expansion of various courses beyond physical classrooms. The number of students enrolling in online classes is increasing annually. It is projected that within 20 years, 25 percent of the university might fail to operate the traditional classroom setting due to high loss that is incurred from costly facilities and low student registration. The artificial intelligence (AI) will completely change e-learning since it will improve or change the current teaching techniques. For example, the use of Seeing AI to teach visually impaired students. Currently, the teaching model asserts that instructors/professors are "source of knowledge and the student is the recipient [1]." The use of artificial intelligence will help the instructor to forego time-intensive –tasks such as lecturing; that is a repetitive process; hence, it will save time so that one can engage in other higher-value work. One of the concrete examples of artificial intelligence in eLearning is the use of Learning Management System that offer real time response when a student asks a question. For the student who does not like the regular classroom sessions, Artificial Intelligence learning Management Systems (LMS) can be deployed depending on distinct learning aspects such as visual, auditory and text that provides effective content on the preferred learning technique. The platform can break down lectures or reading assignments to smaller components that learners can understand. Notably, international students that seek education in various institutions across the world might experience a language barrier, which complicates their educational progress. The AI will help such learners in text translation that they can understand or into their native tongue.
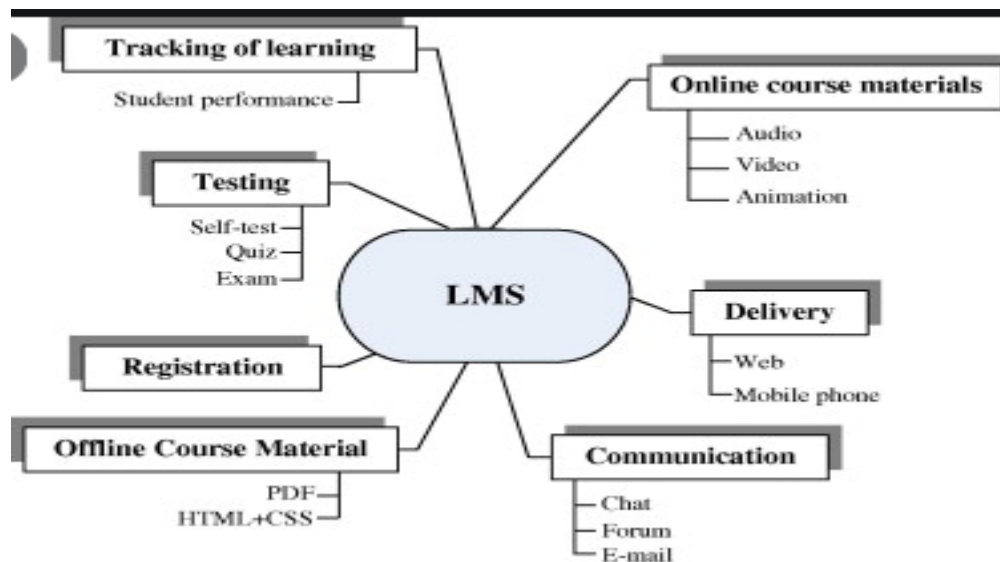

Figure 1: Learning Management Systems [11]

The figure above shows an Artificial Intelligence learning Management Systems (LMS). The learning management system will help one track his or her performance, register for an online course and communicate

with the system in case one needs help. The problem being investigated is whether Artificial Intelligence in the e-learning will improve the quality of education being offered in various universities. Quality education in higher-level institutions means that learners will be innovative and creative. When a student does not understand the course content and its implication in the workplace environment, it implies that no innovation and creativity will be attained. The institutions will remain in the status quo while other countries are progressing in terms of technology. Therefore, AI should be incorporated in higher education courses so that it can translate and ensure that the student understands the course outcome. Learners fail because they do not know what is being tested; hence, there is a need to introduce AI in universities so that it can translate information into native language that is understood by learners. H1: will the AI make learning easier and lead to creativity? H2: Is it possible for a student with disabilities to achieve their educational endeavours through the assistance of artificial intelligence? The research problem will be solved by conducting scholarly or qualitative research that is theoretical in nature.

2. Materials and Methods

As indicated above, the research method will involve theoretical lens and quantitative research that investigates the significance of Artificial intelligence in e-learning. Currently, individuals can access the internet and use it in different ways, such as researching the information that helps them accomplish college or university projects. Others use the internet to get headlines and happening around the world and download music, among others. One of the significant aspects of the internet is learning [2]. Web-based learning, commonly termed as e-learning, plays a vital role in saving education costs. One can acquire quality education in the comfort of his or her home. The web-based learning incorporates emails, live lectures or video conferencing so that a student can attain the designed course outcome. The web-based learning allows learners to participate and provide their views on specific topics and then discuss them with their peers. More so, the web-based learning platform offers course materials that are printable so that all participants can benefit. Therefore, one can finish a bachelor's program without attending lecture classes. Earlier it was challenging to enroll in a learning institution and work, but currently, one can work fulltime and participate in web-based courses at his or her convenience. The convenience and flexibility of web-based learning make it possible for both the young and older generations to work and advance their educational endeavours. Individuals that experience challenges in their workplace can enroll in on-job training that is conducted via web-based platforms. On-job training is beneficial based on the fact that it improves employee performance, satisfaction and morale and addresses weaknesses in various departments. Through web-based learning, an employee can improve and strengthen his or her skills. According to the research done by Kolagani, Artificial Intelligence in e-learning helps in the processing of natural language. The computers will process individual language so that a learner can understand. A learner should communicate to an AI machine with his or her native language or any other language that one prefers. It solves our wishes of talking with instructors in a native language. Importantly, it helps a learner to "communicate with the eLearning platform in the language we prefer [7]." Artificial Intelligence makes learning more accessible and efficient. More so, Artificial intelligence improves accessibility. It is significant to understand that disability is not inability. Therefore, the blind have the right to access education since their disability does not mean failure. Through the help of Seeing AI like the one developed by Microsoft, the app will help the blind to read the text and recognize various questions in the e-learning platform. The Seeing AI has been incorporated in web-based learning courses so that it can describe the environment that the learner is in and

learning resources onscreen. The AI is considered as a virtual assistant since it will respond to any voice command issued to it. This will help the learners with a disability to engage with eLearning courses and increase their productivity in the workplace based on the fact that it offers assistance to the learners. The quantitative research indicates that various universities are introducing artificial intelligence machines to help students in eLearning. The study was carried after searching for universities that are providing personalized help to the student through the help of chatbots. The University of Murcia that is located in Spain is using chatbots to answer questions that seem complicated to students in the different academic majors. When the "chatbot was rolled, the school administration" discovered that it answered approximately 38,708 questions [4]. The chatbot success rate in answering the questions was about 91 percent correct. More so, it provided answers immediately, which motivated students to keep on revising. Other universities that have started the use of artificial intelligence in eLearning are Staffordshire University in the United Kingdom and Georgia Tech in the United States [5]. The artificial intelligence or chatbots are available 24/7 to assist a student in accomplishing their educational endeavours. The Artificial Intelligence machines provide teachers with time to focus on other educational matters and engage in research instead of doing a repetitive task such as lecturing in the class.

Figure 2: eLearning Growth [12]

The figure shows that eLearning growth from 2011to 2016. The figure has increased since most students are working and they need to advance their education level.

3. Results

The result of the study indicates that the Artificial Intelligence machine in ELearning simplifies education since a learner needs to ask the question, and the AI will give a solution immediately. Therefore, quality education is guaranteed since the machine will simplify complex issues to learner's native language or any other language

that the learner prefers. Education becomes monotonous when learners fail to understand the instructor's instructions. Once eLearning is integrated with Artificial Intelligence, a learner can ask questions, relate with the course and clarify any doubt in a language that one prefers. The strategy of using Artificial Intelligence in a web-based learning platform makes learning more accessible and engaging. For example, most international students use English as a second language; hence, they face a lot of issues before they understand what the instructor requires in a given course outcome. The communication barrier affects learner's social interaction with other students and instructors. Therefore, an Artificial intelligence machine will translate various questions or course resource into a language that a learner can understand effectively [10]. When a student understands the course outcome or questions, the student can perform excellently. Additionally, the use of AI leads to creativity and innovation based on the fact that the AI will simplify the information in the course book. The Artificial Intelligence machine will indicate where one should concentrate on if a particular idea is not working. The other impact of Artificial Intelligence is helping the visually impaired persons to pursue their educational endeavours with minimal challenges. Seeing AI helps disabled persons to accomplish their educational goals [7]. This is because the Seeing Artificial Intelligence device will read the text in an eLearning platform and convert it to an audio voice that a visually impaired person can hear. The visually impaired individual will not need a pen and a paper; instead, he or she will provide an audio response and will be converted back to the text that will be posted in the eLearning platform. Therefore, education is democratized since individuals, irrespective of their language and disability will have a chance to acquire knowledge. In some of the developing countries, disability affects the educational endeavours of young individuals; hence there is a need to introduce an eLearning platform and Artificial Intelligence machines. The essential detail that a learner should note in AI and eLearning is that personalized learning is provided. It means that an instructor will create course lessons that best fit in that course. Therefore, the Artificial Intelligence machine might not answer some questions or ideas that do not rely on that course. Students need to research more so that they can have vast information that can be applied in different aspects of life. The other important issue that individuals should pay attention to is that change is inevitable; hence, more institutions should allow artificial intelligence machines in learning institutions. For change to be implemented in learning institutions, the professors and board of management should embrace the Kotters change model [3]. The change model asserts that individuals should have a vision for change and communicate the significance of change in learning institutions. Staying persistent will enhance change in higher education institutions.

4. Discussion

One of the significances of Artificial Intelligence in eLearning is making learning easier. International students that are not conversant with the English language exceptionally will benefit from AI on eLearning. The goal of students is to perform excellently in their educational endeavours and use that knowledge in their workplace environment. The essence of education is not passing exams but achieving experience that will help one in the future to solve various challenges in a particular career. Therefore, when a student has a specific deficiency, Artificial Intelligence should identify it and help the learner solve the issue. This means that the system created will respond to learner's progress or pace in education. When learner progress is assessed, an artificial intelligence machine will provide specific information that a student can consult and will help him or her significantly. Education has been made easier since the student does not have to undergo a lot of stress because

learning materials are converted to their native language. The "personalized learning" tracks the progress of a learner; hence, no student will lack proficiency [6]. This means that quality education will be provided since lack of proficiency in a particular field will be identified. Therefore, there is a need to ensure that universities introduce artificial intelligence in the web-based platform to enhance student competence. Importantly, chatbots are significant because they will help the student to seek assistance by asking questions in case they do not understand various concepts. When artificial intelligence machines are equipped with the right information that is useful to a student, it can perform wonders in web-based learning. The future of artificial intelligence is promising because it will result in innovation and make learning easier or convenient [9]. The aim of converting the English or Spanish to a native language that a student can understand is to ensure that quality education is provided. The student should achieve the concepts deigned in the course outcome so that it can help him or her in the future. The competency-based curriculum ensures that learner attains skills and does not access the student performance. The other significance of artificial intelligence in eLearning is improving the lives of disabled persons. Seeing AI narrates information or the world to visually impaired individuals. This means that disabled persons have an equal opportunity like other persons since the machine will provide them with voice commands that they can understand. Additionally, those who have mobility issues do not need to move from their homes; instead, they need a machine, and they can learn from their homes. It is the role of the instructors to ensure that the devices are updated, and the information provided will relate to the course outcome. The disabled persons will be assisted in learning without moving from their respective places. The characteristic of artificial intelligence machines is adaptability and intentionality. The tools are designed in such a way that they can make decisions using real-time data. The machines use digital data and sensors so that they can analyze particular material instantly. Based on the fact data input is done in remote control, the machine compares the underlying trends so that it can make decisions. Based on the fact that most higher learning institutions seek to impart knowledge and competence in the chosen field, competency-based learning should be acknowledged. Therefore, a student should be left to work on their pace so that they can demonstrate mastery of particular skills. The artificial intelligence machine will try to impart knowledge and skills that the learner should exhibit at the end of the course. The online classes are flexible, and a student can use various resources to demonstrate to the instructor that he or she has acquired the necessary skills and has the competence to work in a particular field [8]. Through the help of an artificial intelligence machine, the learner acquires specific skills as he or she is eager to know how a particular issue should be addressed. The learning material that the artificial intelligence machine provides should be relevant so that a student can achieve expertise in his or her dream career. The use of artificial intelligence in eLearning leads to success in one dream career since complex issues are simplified and organized in a manner that a learner will understand. Importantly, a learner acquires the necessary skills.

5. Limitation of the Study

One of the limitations of the study is that artificial intelligence is expensive. The cost associated with installation is high and also require repair and maintenance. Colleges and universities with excellent financial background are the only ones that can afford artificial intelligence in eLearning. Despite the cost, artificial intelligence will improve eLearning significantly since a student will not require an instructor every time. Higher learning institutions should acknowledge teamwork in order to ensure that education is improved. The other limitation associated with artificial intelligence in eLearning is addiction. Artificial intelligence and eLearning will create

fun in education though most students might be addicted to the use of AI. Most people depend on machines on every task assigned, which will affect the mental ability of learners.

6. Conclusion

One of the implications of artificial intelligence in eLearning is real-time questioning. A student does not need to look for his or her professor to ask questions because AI will do it comfortably. One will receive the answer instantly since it is possible to process a massive amount of data. It makes learning easier for leaners since the relevant information is readily available. The significance of eLearning is to make education easier for learners and cost-effective. Therefore, through the help of artificial intelligence and other private tutors, a student will acquire the relevant expertise. The significant issue in eLearning is to demonstrate that one has obtained the required knowledge; hence, can work in a particular field with minimal challenges. It is the role of the instructors to ensure that they embrace competence-based education that test the skills attained within a given module. Proficiency is the essential aspects that are required in such a curriculum; therefore, students can seek assistance from an artificial intelligence machine and later demonstrate the mastery of such skills. The other implication of artificial intelligence in eLearning is making education accessible to individuals irrespective of ethnicity and disability status. Education has been democratized since one can access learning materials at his or her convenience. No one should fail to achieve his or her educational goals due to disability issues because artificial intelligence machines can convert text to audio and audio to text or in other forms so that it can help the disabled persons. Importantly, one does not have to attend physical class based on the fact that one has an instructor and course materials are arranged well to meet the need of a learner. The future of artificial intelligence and eLearning is promising because people have to work and still improve their skills through on-job training. More so, due to lack of time, individuals prefer eLearning compared to the physical attendance of lectures.

7. Recommendations

We recommend universities to acknowledge the use of artificial intelligence so that disabled individuals can attain quality education. The visually impaired persons have been neglected for a long time and require to interact with other students. The artificial intelligence in eLearning will help visually impaired students to feel lively in class. Seeing AI will help the visually impaired students to gain skills since AI will provide instructions in terms of audio; hence, students need to explain and do according to the instructions. We recommend the implementation of artificial intelligence in eLearning so that students can acquire knowledge in various fields. Artificial intelligence will make education more accessible to students since they will obtain more learning resources.

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