



RESHAPING LEARNING THROUGH ARTIFICIAL INTELLIGENCE

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ABSTRACT

The world of education is transforming at a rapid pace. Computers have been employed within the field of education for many years. The recent and current research within the field of artificial intelligence (AI) is having a positive impact on educational applications. With children increasingly using tablets and coding becoming part of national curricula around the world, technology is becoming an integral part of classrooms, just like chalk and blackboards. Artificial Intelligence Technique will positively transform education in the coming years by delivering customized relevant knowledge to learners, where and when needed. This article focuses on contributions that Artificial Intelligence Technique can make to address longterm educational goals. Instructional systems with Artificial Intelligence technology currently support richer experiences for learners and supply researchers with new opportunities to analyze vast data sets of instructional behavior from big databases that record elements of learning, affect, motivation, and social interaction. Personalized learning is described that facilitates student and group experience, reflection, and assessment.

KEYWORDS: Artificial Intelligence Technique.

INTRODUCTION:

Humans have developed the power of computer systems in terms of their diverse working domains, their increasing speed, and reducing size with respect to time. Artificial Intelligence Technique is a branch of computer science, which pursues to create the computers or machines as intelligent as human beings. Artificial intelligence is accomplished by studying how human brain thinks, learn, decide, and work while trying to solve the problem, and then using the outcomes of this study as a basis of developing intelligent software and systems. The development of Artificial Intelligence started with the intention of creating similar intelligence in machines that we find and regard high in humans. Artificial intelligence Technique is a science and technology which is based on disciplines such as Computer Science, Biology, Psychology, Linguistics, Mathematics, and Engineering.

Recent research predicts that the use of Artificial Intelligence in the education sector will grow 47.5 percent through 2021. Of all the areas where Artificial Intelligence might work, the potential to create adaptive learning features that personalize tools for each student's learning experience is the biggest. The field of Artificial Intelligence research was born at a workshop at Dartmouth College in 1956, (Russell and Norvig, 2003), where the conference was called "the birth of artificial intelligence." Allen Newell, Herbert Simon, John McCarthy, Marvin Minsky and Arthur Samuel are known to be the founders and leaders of Artificial Intelligence research.

For the last two centuries the world went through a great expansion in learning: our literacy rate skyrocketed from 12% to 88% worldwide, and Primary, Secondary and Tertiary education have all seen drastic growth (in schools and students), breaking records on almost a yearly basis. Our educative curriculum has also evolved, embracing our continuous growing understanding of the world and the recent boom of the internet has brought self-education to the masses in exciting ways, turning websites like Khan Academy, TED, Wikipedia and You Tube into some of the biggest free knowledge hubs in the planet.

As a society we have great expectations for the educational establishment. The current environment of fixed classrooms, lectures, and static printed textbooks is clearly not capable of serving a digital society or flexibly adapting for the future. Classrooms and textbooks are especially inappropriate for people who use mobile and digital technology every day (Dragon, *et al.*, 2009). In the past researches, Artificial Intelligence Technique with its inextricable links to cognitive science, psychology, and mathematics has proven a close fit for many of these challenging educational problems. Early Artificial Intelligence Technique, researchers saw this as an opportunity to build intelligent tutoring systems (ITSs) that could adapt and tailor instruction to the individual needs of the student. This suggests that the contributions of Artificial Intelligence Technique to education are perhaps more profound than previously believed and leads us to wonder why Artificial Intelligence Technique based learning technologies are not in every classroom, every home, every library, and on every mobile device. Woolf, *et al.*, (2013) proposed some 'grand challenges' that artificial intelligence in education five proposed grand challenges for education: (1) mentors for every learner; (2) learning 21st century skills; (3) interaction data to support learning; (4) universal access to global classrooms; and (5) lifelong and life wide learning.

NEED OF THE TECHNOLOGY:

It is said that education is an odd bird. Contemporary learning is still very much archaic. We group students arbitrarily around age, indulge them go for regular monthly and terminal exams, conduct parents teacher meet and build a kind of hope that all involved parties are qualified enough to keep students engaged and predictably moving through a static educational curriculum. It works to an extent, but it is not pleasant for anyone. The teachers have a lot of work on their side, from lesson and assignment planning, to teaching, grading and the expectation of giving hundreds of students individualized attention. On the student side, they are forced to adhere to strict timelines and instead of curiosity, live under constant fear of failure looming as they're assigned labels ranging from A to F at the end of each term.

Today's educational system is also static, generalized and puts less focus on individual self development. Students often don't understand why they are learning the things that they are supposed to. This makes certain classes feel purposeless and develop stress in them. Now, the question arises what could be done to fix these issues and take education to a new level? What could make education more exciting, fun and practical? Obviously the answer lies in the exploration of smart use of technology.

CONCEPT OF TECHNOLOGY:

Artificial Intelligence Technique is one of the most important technologies in the contemporary world, with its influence grasping everything from the creation of medicine, financial market predictions, chat bots and art. It already touches all of our lives in ways we can't even fathom, and much like the computers and internet we use on a day to day basis, we're bound to get increasingly dependent on the power it gives us.

The Artificial Intelligence Technique is the ability of a system to calculate, reason, perceive relationships and analogies, learn from experience, store and retrieve information from memory, solve problems, comprehend complex ideas, use natural language fluently, classify, generalize, and adapt new situations.

Artificial Intelligence is a technique to organize and use the knowledge efficiently in such a way that:

- It should be perceivable by the people who provide it.
- It should be easily modifiable to correct errors.
- It should be useful in many situations though it is incomplete or inaccurate.

There are three major differences between Human and Machine Intelligence:

- Humans perceive by patterns whereas the machines perceive by set of rules and data.
- Humans store and recall information by patterns, machines do it by searching algorithms. For example, the number 40404040 is easy to remember, store and recall as its pattern is simple.
- Humans can figure out the complete object even if some part of it is missing or distorted; whereas the machines cannot. It requires more knowledge, complex knowledge representation, and complicated algorithms for handling mundane tasks. This is the reason why Artificial Intelligence Technique

work is more prospering in the Expert Task domain now, as the expert task domain needs expert knowledge without common sense, which can be easier to represent and handle.

The three factors which can be helpful for reshaping the learners with the use of artificial intelligence are personalized learning, experiential learning and mastery-based learning.

- a. **Personalized Learning:** It refers to a diverse variety of programs, learning experiences, instructional approaches, and strategies that address the distinct learning preferences, interests, aspirations, weaknesses, or cultural backgrounds of individual students. The result of this is an educational experience that is more fitting to a person as an individual and maximizes what a student can get out of each class.

This is a powerful concept, and it shows that for students to learn anything they need to be convinced that the information being shown is important. A teacher must first inspire for properly teaching the students. Different students respond differently to distinct motivations, but this is why the most popular teachers tend to be inspirational and they don't just throw information at students for them to process, rather they also inspire and awake the interest and curiosity of the class. Once a student finds a subject cool, every-changing changes for their brain.

- b. **Mastery-based Learning:** Mastery-based learning is based around a very simple idea that when dealing with cumulative subjects (like Math, where past knowledge is essential to understanding what's next) a student should only move forward with the subject once they have mastered all concepts that precede it.

Today's education don't works like this. There is a distinct difference between actually understanding a subject and simply learning how to get through a series of tests which is what an alarming amount of students tend to do.

Mastery-based learning can fix all of those issues. Through a deep personal and individualized approach, students can move quickly through the subjects they are better at, and dedicate the required time wherever they face complications. Ultimately, the students are only allowed to move forward when they master a subject, without feeling humiliated for taking teachers' time. The end result is actual knowledge that can spread interconnection with other subjects in a number of unexpected ways, both creatively and intellectually - much more than a grade for a transcript.

- c. **Experiential Learning:** This is formally known as experiential learning a process of learning through experience or "learning through reflection on doing". In scientific research and in the classroom, it has demonstrably been shown to be one the most effective forms of meaningfully retaining information. Experiential learning engages most of the senses, builds social-emotional skills, creates a context for memorization, expands critical thinking and is unquestionably more relevant to real life applications of what is being studied.

Experience based learning also encourages experimentation, embraces curiosity and turns mistakes into a natural part of the learning process, rather than grounds for punishment of students. There is no wonder that it is such a powerful form of learning through which we have been learning things since primordial times.

SIGNIFICANCE

No machine can replace human teachers but it can save them from crumbling under pressure Artificial Intelligence Technique can help teachers in collaborative learning. Collaborative learning modules, such as a group presentation on a history subject or a team science project, have powerful benefits. Students learn to listen to each other, engage in constructive discussion and share knowledge. Artificial Intelligence Technique assistants can help take the place of the teacher in moderating group activities and/or participating in the discussions. This can help the teacher administer more collaborative learning projects than they could support by themselves. Using Artificial Intelligence Technique to optimize instruction can improve student engagement, which will increase course completion rates. At the same time, online AI tutors can also be used to fill in students' gaps of understanding and help them overcome obstacles. Given the massive scale of these online courses, an Artificial Intelligence Technique tutor's ability to monitor performance and provide high-frequency feedback can provide an interactive learning experience that is impossible for the teacher to provide (Floryan and Woolf, 2013).

Teachers assign homework because it works when students actually do it. To complete these assignments, one has to think about what they are doing, perform the task at hand and reflect through the entire process. But from a user-experience standpoint, homework tends to be uninspiring. It doesn't play with most of the senses, its format is predictable, it usually isolates students and it is not exactly exciting to complete. So why we are not trying to do things differently?

Conceptualizing new ways to teach subjects like math, biology and history experientially is a huge design challenge. So, how would we go about engaging all senses, making learning active and social, keeping the cost low and achieving all learning goals? The answer lies in practicing some exciting new technologies that can bring change education forever.

Artificial Intelligence Technique can transform classrooms and learning, with teachers able to use technology to create customized content for specific subjects and students. But teachers will need to be able to monitor and track the progress of every child, not only in literacy and numeracy, but also personal attributes.

According to Dr. Scott, education systems around the world need to start preparing now for the world that today's five-year-olds will inherit. The future in the classroom should be settled now. We are at a crossroads and we can't sit back and wait for the revolution to happen to us. We need to lead the change. This is education's moment.

Examples of some Artificial Intelligence Technique in classrooms around the world :

- Third Space Learning's online math tutoring platform is used by over 500 schools in the UK providing weekly one-to-one math's sessions for students with tutors based in India and Sri Lanka.
- Brainy supports collaboration with a social learning network for students. It has 80 million unique users each month from around the world and encourages peer-to-peer learning.
- Content Technologies Inc (CTI) allows teachers to customize textbooks. Educators import a syllabus and CTI's systems populates a textbook with the content.

It is impossible to accurately predict the jobs of the future. Children of this era are facing a more uncertain future than any child has faced since the Industrial Revolution. We need to teach students to find and make meaning in their learning not to simply master a list of skills. The children who have started school in 2017 will need to be just as skilled in critical thinking, creativity and empathy as they are in literacy and numeracy and technology. Schools will need to prepare the next generations of students for a world that will be dominated by intelligent machines.

CONCLUSION:

Over the last decade, applications of artificial intelligence have addressed several challenges of learning, including language processing, reasoning, planning, and cognitive modeling (Woolf, 2009). In another application to learning, artificial intelligence can help organize and synthesize content to support content delivery. Known as deep learning systems, technology can read, write and emulate human behavior. Progress in artificial intelligence and machine learning has been impressive, but there is still much work to be done to advance learning science.

This is not just the future of computers, but also the future of human perception. This is a world where computers can understand our surroundings and where technology feels unbound from the human experience. Artificial Intelligence is already changing the way we interact with our devices - Conversational User Interfaces are an increasingly popular way to control our devices through voice. It is widely used today in smart phones (Google Assistant, Siri, Cortana) as well as home devices (Amazon Echo, Google Home), it plays into one of the most intuitive ways for humans to get anything done viz. talking. This technology is getting better every year with continuous advancements in text-to-speech, voice recognition and procedural conversation building, now it has become only a matter of a few years that we would start to have fully fledged conversations with the devices we own.

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