Artificial Intelligence in Education: 3 Areas Where AI Can Impact Educational TrAIning

Vernor Vinge once said, "Within thirty years, we will have the technological means to create a superhuman intelligence. Shortly after, the human era will be ended." This might be something that you ponder on when the term AI, artificial intelligence, is brought up. It is a concept that many people do not wish to delve into due to the fear that it might end humanity in the future. However, this is just a myth that is portrayed through the sci-fi industry. AI does not and should not be an idea feared upon. It is an idea that will make our daily routines more efficient, just like technological advancement in the past has. I believe AI will play a significant role in our education system one day, and the only thing stopping us from pioneering in the world of AI is by ignoring the ways that it can enhance our daily lives. So, you are probably wondering how exactly can AI help? There are many areas in which AI could play a significant role in how we view educational training. A few are through communication, personalization and assessment. First, let's start by talking about how AI can affect the communication aspect of learning.

1   Communication

Modern day education is bounded by the walls of classrooms where students are generally isolated from other classrooms either around the school and around the world. AI can help break down this communication barrier by creating virtual networks that supply and enhance students with opportunities to connect with other students or mentors around the world. One

important aspect about this method is through learning new languages. In today's education, language classes are limited to what students can learn in the classroom. However, in my experience, learning a language is best done by immersing yourself in the environment in which the language is predominant. Classrooms will only teach you basic vocabulary and phrases. Not being able to fully experience the real environment heavily limits how much you truly know the language. The simple solution to this would be to take study-abroad classes where you can fully immerse yourself in the targeted language. However, that isn't something that everyone has the time or money to do. The solution to this is to develop language-learning apps that are fueled by AI to connect students' worldwide to set up the most optimal environment to learn specific languages. A "smart" language-learning app can use distinctive code to analyze user data to keep it personalized for each user to focus on certain areas of interest to aid real-life conversations. Two students would connect through this language-learning app, listen to each other practice conversation in whatever language they are learning and help each other with grammar and pronunciation. This can be used to aid typical textbook learning in classrooms to help students efficiently practice the language in a controlled environment that evolves as the student progresses. This leads to another key aspect in education where AI can truly help: personalization.

2   Personalization

Artificial intelligence does not have to completely replace teachers and mentors in their respective roles in education. I do not think it would be most efficient for technology to completely replace human methods of teaching. As said by Kyle Wagner, in his own research on

artificial intelligence, "teachers must shift from the 'sage on a stage' to the 'guides on the side'". Teachers simply do not have the time and resources to aid each student in every area they have trouble grasping. The most efficient way to tackle this problem is by setting up each student with their own personalized instructor that aids the student through every aspect of learning. After each student is done with a certain lesson through the AI-fueled learning system, it is the teachers and mentors job to test the students' learning by giving them challenging problems to work on to keep that human-styled approach in education. This also gives teachers extra time to thoroughly develop curriculums. As of right now, teachers are limited by what the school boards set as the standard curriculum. However, AI can create a general global learning environment where teachers from around the world can share ideas and different approaches, something like KhanAcademy. If AI is used to supplement each student with their own personalized education, teachers are given the freedom to focus on the students' professional development. This can help students discover what kind of career they want to pursue in the future. It eliminates today's general education where every student is forced to learn at the same teaching standard. AI is a great way to analyze a student, examine where supplemental learning is needed, and discover additional resources to aid that student's learning experience. AI can also replace costly textbooks that students must empty their pockets on at the beginning of each semester. An engine can be used to develop and organize the content from a teacher's course syllabus. Personalized AI instructors for each student can then modify the content in ways to meet that student's needs. Some sites like EdX, Udacity, and Coursera are already providing a variety of classes where textbooks are simply not necessary because all the content

is already developed and organized through online classes. Big data plays a crucial role in this and in our next aspect of learning, which is an assessment.

3   Assessment

Big data defined as extremely large data sets that may be analyzed computationally to reveal patterns, trends, and associations, especially relating to human behavior and interactions. As stated by Language Hero's topic on AI and language learning technology, big data is "another branch of AI focused on analyzing detectable visual, environmental, and behavioral events and looked for actionable patterns within vast arrays of data". Nowadays, teachers spend a lot of unnecessary time assessing students' work instead of focusing on student achievements. AI can assist teachers by evaluating students in a more efficient manner. It would take the data and provide an in-depth analysis for teachers to help students better learn from their mistakes and grow as individuals in the professional world. There areadditional advantages to this, than justmaking the assessment process more efficient. If AI can supply students with instant feedback on professional work and papers, it would allow students to focus and grow from their weaknesses. It can also be used to help students study material more effectively. As of now, students are tasked with difficult problems they must solve and if the student gets stuck on a certain problem, the only resources they are provided are the answers given to them by the teachers. This could help a student realize how to solve specific problems, forcing the student to rely on given answers.. AI can create effective programs that track a student's work step by step, shading light on where exactly the student is having trouble. This allows a student to continuously work on challenging problems in an efficient manner without having to worry

about generalized answers supplied by human instructors. These programs can use all data supplied by the students' work to create additional assignments to target each student's specific skill sets and weaknesses.

Artificial Intelligence can play many roles in educational training. It can vastly improve communication between students around the world and connect them to a cyber-pool of limitless information. It gives each student a reason to continue learning by supplying them with an ever-evolving personalized set of instructions. And it greatly helps a teachers' job by assisting them with mundane tasks, such as grading generalized work. It is an advanced kind of technology that we shouldn't turn our back to but accept with open arms if we want our future generation equipped with the highest sense of knowledge. Eliezer Yudkowsky once said, "Anything that could give rise to smarter-than-human intelligence—in the form of Artificial Intelligence, brain-computer interfaces, or neuroscience-based human intelligence enhancement - wins hands down beyond contest as doing the most to change the world. Nothing else is even in the same league." So, let's start changing the world by enhancing education with artificial intelligence.

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