ARTIFICIAL INTELLIGENCE IN CLASS ROOM AND EDUCATIONAL INSTITUTIONS

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ABSTRACT

As Artificial intelligence (AI) develops into a leading trend in education sector, it is becoming vital in higher education at both the institutional and course level. A recent One of the most common types of integration is through the use of chatbots for encouragement, reminders, and prompt assistance to help students stay on track. It is also being used for monitoring class discussion boards for inappropriate comments. Some universities are using it to handle frequently asked questions. Different AI tools are "trained" for different purposes. When we think artificial intelligence, it's likely that scenes from a science fiction thriller come to mind. Robots fighting humans, men falling in love with a computer that learns to feel, iPhones outsmarting their user and my approach is how Artificial Intelligence works in class room environment to enhance the technology to student.

Keywords: Artificial intelligence, chatbots, MOOCs, Machine Learning, NLP, VLA, LMS

I.INTRODUCTION

Artificial intelligence, defined as intelligence exhibited by machines, has many applications in today's society. Precisely, it is Weak AI, the form of A.I. where programs are developed to run specific tasks, that is being utilized for a wide range of activities including medical diagnosis, electronic trading, robot control, and remote sensing. AI has been used to develop and advance numerous fields and industries, including finance, healthcare, education, transportation, and more.

There are a number of companies that create robots to teach subjects to children ranging from biology to computer science, though such tools have not become widespread yet. There have also been a rise of intelligent tutoring systems, or ITS, in higher education. For example, an ITS called SHERLOCK teaches Air Force technicians to diagnose electrical systems problems in aircraft. Another example is DARPA, Defense Advanced Research Projects Agency, which used AI to develop a digital tutor to train its Navy recruits in technical skills in a shorter amount of time. Universities have been slow in adopting AI technologies due to either a lack of funding or skepticism of the effectiveness of these tools, but in the coming years more classrooms will be utilizing technologies such as ITS to complement teachers.

Advancements in natural language processing, combined with machine learning, have also enabled automatic grading of assignments as well as a data-driven understanding of individual students' learning needs. This led to an explosion in popularity of **MOOCs**, or **Massive Open Online Courses**, which allows students from around the world to take classes online. Data sets collected from these large scale online learning systems have also

enabled learning analytics, which will be used to improve the quality of learning at scale. Examples of how learning analytics can be used to improve the quality of learning include predicting which students are at risk of failure and analyzing student engagement

Artificial Intelligence In The Classroom

Artificial Intelligence has proven its role as a game changing factor in an increasing number of fields, causing transformations unimaginable in the past. It's now showing glimmers of how it might forever change the learning process, one of the oldest skills that mankind has mastered. AI and its derivatives are gradually finding their way into the classroom, and beyond.

II. BALANCING IN-CLASS TEACHING

Traditionally, schools adopt a one-size-fits-all approach to teaching. But students learn at different paces and have different progress rates. Meanwhile, teachers often find it hard to identify and deal with the educational needs of students attending their classes.

This is a problem that Artificial Intelligence is solving. Machine Learning algorithms, programs that glean patterns from data and provide insights and suggestions, help teachers to find gaps in their teachings and point to where students are struggling with subject matter.

Third Space Learning, an online math tutoring platform that debuted five years ago, is exploring the concept. Capitalizing on the huge store of student-teacher interaction data it has collected from millions of lessons, Third Space has launched a AI project that aims to find positive teaching and learning patterns.

AI-based tutoring systems are another interesting concept that use big data and machine learning to provide personalized, supplemental guidance to students. An AI tutoring system will present a core theory and monitor student responses to evaluation questions. The feedback will enable the system to determine the best path to follow toward the mastery of the subject.

The use of AI-based tutors helps students adopt productive learning behaviors, such as self-regulation and self-explanation.

III. ENHANCED CROWD-SOURCED ONLINE TUTORING

Almost as old as the classroom it is the practice of getting help from private tutors and classmates to fill the gaps and complement what is taught in the class itself. It is really good to know online services; students have been able to get help from peers thousands of miles away. Now with the help of AI and Machine Learning, finding remote help is becoming even easier.

IV. CREATING CUSTOMIZED CONTENT

Textbooks, students books and course material are usually tailored for the average student and printed in large numbers for millions of students to use. But as we've all experienced, not all teachers and schools have the

same teaching style.Now, thanks to AI, teachers and schools will be able to create textbooks and exercises that are customized to the needs of their specific courses and students.

V.THE FUTURE OF EDUCATION AND ARTIFICIAL INTELLIGENCE

Online software's and tools designed to enhance the knowledge of students are lifelong learning companions." These software agents that can exist in the cloud and be accessible from multiple devices, gathering data about children and assisting them as they grow and develop their knowledge. We still have ways to go before learning companions become a reality. But the fast pace at which AI is gaining traction in education heralds a promising future.

However, beyond the passing of knowledge, teaching is a complex social interaction. This means teachers can rest assured — for the moment at least — that robots won't be replacing them. They will instead assist teachers in becoming better in class rooms.

VI.AI VIRTUAL LEARNING ASSISTANT SPECIFICALLY FOR EDUCATION
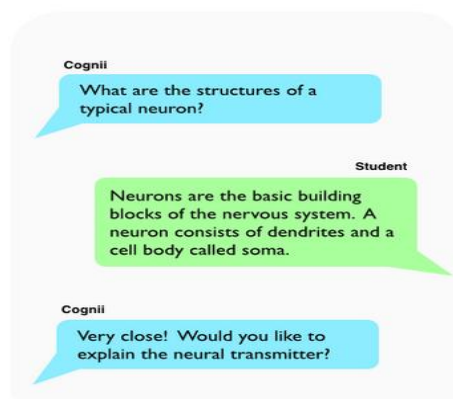
Many artificial intelligence (AI) solutions purposes are broad, such as Apple Siri, Google Now, Amazon Alexa, IBM Watson, and Microsoft Cortana, a unique and specific solution, a Virtual Learning Assistant (VLA), has been exclusively developed to improve education.

Research validates that some of the most proven practices for improving engagement, learning, and retention are more-frequent formative assessments, writing-to-learn, open response assessments, and one-to-one tutoring. These practices, however, are generally dependent upon access to a well-trained human to guide, grade, and accomplish. Using the most advanced Artificial Intelligence (AI), **Natural Language Processing** (NLP), Machine Learning, and Cognitive Computing technologies Cognii's **Virtual Learning Assistant** (VLA) solves this costly need. Cognii gives customized feedback and engages students in active learning and helps improve their knowledge retention. Their solution provides one-to-one tutoring, open-response questioning, instant feedback, and conversation until the student has mastered the concept. It then delivers instant scoring at human-level performance. By automating assessment and feedback, Cognii's VLA makes it possible for students

located anywhere to learn any topic. Some of the most prominent universities and colleges are using VLA. Most of the students satisfied with these new VLA.

VII. HOW DOES THIS AI SYSTEM WORKS IN EDUCATION SECTOR

Experts and course designers to develop a curriculum script for identified topics. By using NLP algorithms, the script is mapped to a proprietary format and deployed on the institutions **Learning Management System** (LMS). Students take advantage of this interactive self-paced learning environment as a course progresses. As students answer questions, they receive immediate assessment, qualitative hints, feedback, and guidance. The process continues, eliminating any missed concepts until the student achieves mastery.

Not only is this proving to be a valuable tool for students, but faculty are benefiting from the administrative dashboard, which makes monitoring each student's progress easy. The rich analytics lets a professor know where a student needs more attention and identifies where curriculum might need to be adjusted based on which concepts are more difficult for the majority of students to grasp. A favorite benefit of using AI is that it can grade a large number of short essays within a few minutes.

It is no wonder why Cognii has won several awards including the University of Pennsylvania's Reimagine Education Best Learning Assessment Innovation Award and MASSTLC EdTech Innovation of the Year Award. With artificially intelligent solutions like these, educational institutions can streamline work processes while providing richer experiences for students.

VIII. CLASSROOM BASED ARTIFICIAL INTELLIGENCE

1. Thinkster Math: Deemed, "the math app that offers an unusual human touch," by The New York Times, Thinkster Math is a tutoring app that blends real math curriculum with a personalized teaching style. The app assigns each student a behind-the-scenes tutor who watches their mental process unfold step-by-step on an iPad screen. First, Thinkster Math presents the user with different problems appropriate to their skill set. As students write out how they've reached an answer, the app analyzes their written work to determine where they've gone wrong or misunderstood an important problem-solving step. Thinkster Math improves each students' logic process by providing video assistance for stuck students and immediate, personalized feedback.

2. Brainly: Brainly is the social media site for classroom questions. Using Machine Learning algorithms to filter out spam, Brainly allows users to ask homework questions and receive automatic, verified answers from fellow students. The site even helps students collaborate to come up with correct answers on their own. If you've got a student who commands the classroom, he or she can provide answers on answers and work

towards becoming a Brainly community moderator. Brainly has experts on a variety of school subjects and works to create a classroom-like community for that personalized chalkboard touch.

3. Content Technologies, Inc.:

Universal textbooks are only helpful for cardboard cut-out versions of students who look, think, problem-solve, and process information the same. Content Technologies, Inc. (CTI) is an AI company using Deep Learning to create customized textbooks that fit the needs of specific courses and students. Teachers import syllabi into a CTI engine. CTI machinery then masters the content and uses algorithms to create personalized textbooks and coursework based on core concepts. When was the last time your classroom read a textbook cover-to-cover, utilized every page of practice questions or actually saw correlations between in-class work and assigned reading? CTI hopes to fill that gap and help publishers create effective textbooks right for each individual learner.

4. Mika:

Similar to Thinkster Math, Carnegie Learning's Mika offers AI-based tutoring tools for students too busy for after-school tutors and too lost in a sea of other students for personalized attention. And if you think one-to-one attention is just for elementary schoolers struggling with long division, Mika specializes in higher ed tutoring to fill gaps in collegiate classrooms notorious for lecturer-sized classrooms. The app is guided by each student's unique learning process, keeping users aware of their daily progress and adapting lessons to each student's specific struggle.

5. Netex Learning:

 Netex learning lets teachers design curriculum across a variety of digital platforms and devices. The site helps even the most technologically illiterate educators incorporate interactive elements like audio, video, and self-assessments to their digital lesson plans, all within a personalized learning cloud platform. With Netex, teachers can create customized student materials to be published on any digital platform while providing tools for video conferences, digital discussions, personalized assignments, and learning analytics that show visual representations of each student's personal growth.

IX.CONCLUSION

What you think of artificial intelligence, there's no denying its place in modern teaching. And while there's no replacing the human aspect of our beloved teachers, I believe Artificial Intelligence will only help the overworked and underfunded future classrooms. The scientific community is beginning to realize that in many ways, we've got learning wrong as a species. The model of sitting in a classroom looking at a blackboard, listening to a lecture and taking tests—it's probably one of the least effective ways one can actually learn.

Most of the communication takes place through SMS text messaging or other messaging platforms (like the discussion board in a LMS). The more students communicate with the system, the greater the knowledge base grows, and the "smarter" the AI assistant becomes. Virtual teaching assistants were recently recognized as one

of the most transformative technologies to Impact College within the past 50 years by the Chronicle of Higher Education. Virtual Learning Assistant (VLA), has been exclusively developed to improve education

The AI community is grappling with broader conversations regarding the ethics of safely ushering new technology into the world. Overall, the dream of a highly educated global citizenry is a worthy cause for our common good and collective future. So, learning is a life long process, obviously adopting new techniques in class rooms or Educational sector gives health atmosphere to acquire knowledge without giving much struggle to the brain. . Artificially intelligent solutions like these, educational institutions can streamline work processes while providing richer experiences for students.

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