

Artificial Intelligence



Teacher's Guide to Using AI







Introduction

For many of us, Artificial Intelligence (AI) is a complex concept. However, we must face the reality that **AI** is already an integral part of our lives: from facial ID in our phones to Netflix recommending us shows.

In the context of education, AI is **not** here to replace teachers, but to free them from spending time on routine administrative tasks.





Role of AI in Education

Overall, artificial intelligence is the use of computers to simulate human brain processes to complete a routine or repetitive task more efficiently.

Teachers spend majority of their days carrying out administrative tasks in addition to instruction. Reviewing homework, creating lesson plans, grading tests are just some of teachers' fundamental tasks. All of these task and many others can be completed by AI, hence teachers can spare more time to getting to know each student and meeting their learning needs.





The benefits of using AI in education

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1) Automation of Administrative Tasks

AI comes in very handy to reduce the time teachers spend on routine tasks like grading homework, and enables them to utilize that time on things that AI is not capable of doing such as building students' social emotional skills and fostering meaningful parental engagement.







2) Grading and Feedback on Classwide Mastery

Apart from automating scoring, such as answers on a multiple choice quiz, AI software is capable of identifying and analyzing patterns in correct and incorrect answers, so teachers can locate the areas where further emphasis is necessary, either with an individual student or the class as a whole.







3) Differentiated and Individualized Learning

With number of students in a class, it is a challenging task for one teacher to compile all the data relevant to every student's academic performance, and identify each student's strengths and weaknesses. AI not only can do that, but also it can create customized course of instruction adressing each student's particular knowledge and skills gaps.





4) Inclusion

AI tools can create a more inclusive classroom and school environment by connecting homebound students to the classroom; making instruction accessible for students with visual or hearing impairments and other disabilities; and bridging communication gaps for English language learners.





5) Feedback to Students

Individualized AI tools can provide a simultaneous feedback to students which results in greater understanding. And for those students who hesitate to ask questions or fear providing an incorrect answer, AI tools provide the freedom to seek information, make mistakes and persevere through those mistakes.





6) Content Creation

Whether it's a complete online learning course or a digital study guide, AI can create resources for teachers to use with the entire class or individual students. And because the resources are created by a machine learning tool, they are automatically and continually updated so the content is always current.





What are some examples of AI tools for teaching and learning?

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Information visualizations are internet-based simulations and graphic representations that can help students more fully understand concepts. They are especially helpful to those who learn in different ways. For example, instead of just reading facts about volcanos, students can view a 3D model that shows what happens both outside and inside a volcano during eruption. (Google Charts, Visual.ly, Data Wrapper, Power BI, Infogram)



AI-powered chatbots can answer students' questions 24/7, giving students a level of one-on-one assistance on basic questions whenever they need. (Socratic, Juji, Khanmigo)



Adaptive learning programs and AI tutors guide the student through a lesson, give immediate feedback on right and wrong answers, and make changes based on those answers to focus on areas the student still needs to master. (EdApp, Educake, Spellzone)





- **Speech recognition software** can help English learners with pronunciation of letters and words. Programs also use avatars to involve students in conversations and real-life situations, allowing for a more immersive learning experience. (Nuance Dragon Speech, Otter.ai, Braina, Chivox)
- **Scheduling apps** and software enable students and teachers to organize their tasks and overall workload on a daily, weekly, monthly and even yearly basis. (Jira, Clara, Trevor)
- Science simulations make learning possible when real-life science experiments aren't feasible. With virtual reality, students can still experience the moment of discovery even when dangerous materials are involved or expensive, specialized equipment is needed. (LearnSci, PhET, PraxiLabs, Anylogic)







Grammar apps and software go beyond checking spelling and punctuation to provide vocabulary enhancements, analyze sentence structure and style consistency, and suggest ways students can improve their written work. (Grammar.ly, ProWritingAid, QuillBot



Substitute teachers' effectiveness can be drastically improved when they can access software the teacher has used to **track exactly where the class is** with regard to specific lessons, as well as which students may need extra help. (Schoolbox, SchoolStatus, ConexED, Teachmint)







Robots and voice assistants are a way to teach social skills to children with autism, as they learn appropriate ways to communicate with others. For students with visual impairments, software can read text aloud. Students with an auditory processing disorder can use technology to transcribe oral lessons to written form they can review later at their own speed. (VoiceOver, Talkback, Ava, Siri, Cortana, Google Assistant, Lookout, Seeing AI, Speechify, IFTTT)



Assessment apps and software track individual student progress and overall class progress toward achieving set learning goals, so teachers can alter lesson plans along the way to address shortcomings in learning. (Gradescope, Cognii, Plaito, CENTURY, ClassPoint AI, Education Co Pilot)





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