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Teaching Natural and Artificial Intelligence

The recent increase in popularity of AI has caused it to go beyond its functional use and become a crutch for many students. The easy access they have to applications that can essentially work for them has sparked debates not only about AI's place in education but also the goal of education itself. Students use it to study and also shortcut their way to success, while educators take advantage of their resources to grade and create lesson plans. This discourse has left students and teachers alike wondering how AI fits into education. AI can be used as a helpful tool, but it can easily slip into overuse and cause dependence on the part of the student. Thus, AIs place in education must not replace critical thinking skills but instead be used to improve efficiency; the role of the school is then to teach their students the cognitive and technological skills to be able to succeed in the real world.

When overused and unregulated, AI often leads to the erasure of critical thinking in students. A study conducted at M.I.T. found that groups who used AI to write an essay had significantly lower dynamic directed transfer function than the group who wrote from knowledge only (Brooks). Essentially, offloading work to AI also offloads the cognitive abilities you would have strengthened in the process. As Shirky states, "Learning is a change in long term memory; without actual effort, students will not develop any real skills," (Shirky). When students use AI in an attempt to lighten their workload, they are actually falling into a vicious cycle; the more they choose to disengage in the learning process, the less they will be able to engage further

down the road when they are missing basic critical thinking skills. Most classwork, such as essay writing, is not assigned for the product, but more for the process: "the process teaches crucial skills: researching a topic, judging claims, synthesizing knowledge and expressing it in a clear, coherent and persuasive manner," (Source A). Using AI to circumvent the effort necessary to complete work assigned in class also causes students to lose the actual value associated with that work. Moreover, this absence of effort by taking advantage of AI instead of going through the actual process is "the show of wisdom without the reality" (Source A). A student who passes a class solely through the valiant efforts of its digital partner did not truly gain knowledge, yet they may falsely believe that this experience has educated them. This idea of "excellence without effort" (Brooks) is simply too good to be true; believing this false narrative can lead students to overestimate their actual cognitive abilities. This shift in mental capacity is not only noticed by teachers. A sixteen year old girl, after becoming heavily reliant on AI, claimed, "the more I relied on [ChatGPT], the less I challenged myself" (Source C). Schools are supposed to be places of learning, but if students are constantly subletting their chances of education to AI, no learning is actually being done. This plethora of examples shows that unrestrained access and abuse of AI is detrimental to the development of a student's intellect. If a student is giving AI every assignment, we need to ask ourselves who is really earning that diploma. It is evident that heavy reliance on AI is not only putting the school system in a bad light but doing a strong disservice to the student.

Though AI can be taken too far in education, it does have value as a supplemental tool to both students and teachers. I once took on a job where my sole purpose was to help a twelve-year-old girl with the homework her actual math tutor gave her. For a not too shabby thirty dollars an hour, I was no more help than Desmos would have been. Now imagine a student

in a less well off family, where they could definitely not afford a math tutor in the first place, much less a tutor for that tutor. In a case like this, AI would be a great tool to help kids see where they went wrong and how to fix it. The real question lies in how educators can balance AI use so that it is fair while making space for cognitive effort. Assignments should be worthwhile to complete for both the student and teacher. If you are asking a student to look up fifty words by hand in a dictionary, you should not be surprised when they ask their favorite artificial partner to do it for them; "if you have come up with an assignment that can be satisfactorily completed by computer software why bother assigning it to a human being?"(Source F). It is understandable that in the same way that NASA no longer hires human calculators, teachers should not focus solely on getting students to produce computable work. However, this idea that students should never learn to do work AI can do is also a bit flawed. Shirky states that even when redesigning assignments, AI use stayed constant (Shirky). Thus, teachers need to find a way to create engaging work while also recognizing the value in students understanding what and how AI is creating. In the same way that we learn long multiplication but use calculators in calculus, students need to learn the skills but be able to use external tools when the portion completed by AI is not the focus of what students should gain from the assignment: "As Plato was wrong to fear the written words we would be wrong to think we should resist a process that allows us to gather information more easily" (Source A). Teachers need to guide students through the right ways to use AI while also emphasizing the significance of having personal knowledge. Thus, AI's role in education should not be to think for the students, but a henchman of efficiency that allows students to do more thinking.

Regardless of regulations on AI in the classroom, students need to learn how to navigate using AI in the real world. People who are constantly reliant on AI will struggle deeply when

faced with new problems. One college student stated he was so reliant on AI he needed it to text girls (Brooks). Another source wrote that "some [students] are already so reliant on AI that working without it is disorienting, even upsetting" (Shirky). In the graphic by Platts, he displays a student helpless without access to AI and the internet (Platts). If students are no more than shells powered by AI, why would a company hire them to just reiterate what they can get for free? In this era of AI, it is of utmost importance to teach students how to think, not just what to think. Schools are supposed to educate students to not only be functional members of society but also successful members of the workforce that push beyond what your web browser can do. Consequently, we need to teach students to think for themselves while using AI as a tool, "at minimum because it will soon transform many occupations" (Source A). As we learned to work with cars instead of horses, electricity instead of oil, and typing instead of hand writing, "the right approach when faced with transformative technologies is to figure out how to use them for the betterment of humanity" (Source A). It is the responsibility of the education system to make sure that students are equipped with both the technological and cognitive skills to succeed in the real world. Eliminating A.I. means students who are unprepared for the job market, and lacking restrictions means students who are essentially uneducated. Schools need to find a balance of teaching the wide variety of skills that are necessary to thrive in the digital age.

The intent of AI use in education should not be to replace the student's voice but instead amplify it; it falls on the teachers to guide students in the process of finding ways to use AI both efficiently and ethically. The creation of AI does not mean the death of education, but rather a revolution for it. Teachers can now focus on critical thinking, problem solving, and communication more than rote memorization, though educators need to stay cognizant of whether said skills are being perpetuated by the student or their cellular device. The change of

technological advancement is a growing pain that is current but not new; as society adapts to these innovations, schools will need to change too, as they have done in the past and will continue to do in the future. Let A.I. allow schools to make strong, humane, and thoughtful thinkers that can supersede the feats of previous generations and AI, transforming society for the better.