

# THE FUTURE OF TEACHING AND CARETAKING: AI ADVANCEMENTS AND THEIR IMPLICATIONS

Valentina PAJAZITI<sup>1</sup>, Driton PAJAZITI<sup>2</sup>

University of Tetova, Faculty of Pedagogy, email: [Valentina.pajaziti@unite.edu.mk](mailto:Valentina.pajaziti@unite.edu.mk)

---

## Abstract

In today's rapidly evolving world, new technologies and inventions on the horizon are changing our perspective on how we live and choose to live our lives. AI technologies like GPT-4, BERT, ChatGPT, Midjourney, and DALL-E are already changing how humans learn and interact—children and adults alike. The main implications of these technologies are observed in academic papers, programming, and idea generation. It is not that humans cannot be creative; rather, AI models offer users a wealth of ideas and information in record time, surpassing human capacities. Nevertheless, people are and will continue to misuse these technologies by relying on completed work and results. Thankfully, counter AI technologies are also improving at the same rate as AI, ensuring that today's AI technologies are not perfect and do make mistakes. However, the future of teaching and caretaking will be impacted tremendously, with AI offering precision and consistency. Points will be raised on the morality of AI education as it will be "emotionless" and "dry"; however, while AI may lack emotion and personalization, its benefits, such as eliminating favoritism and grading bias, outweigh the drawbacks.

*Keywords:* AI, advancement, learning, technology, education, misuse.

---

## Introduction

The integration of AI in teaching and caretaking is bound to revolutionize both of these fields rather quickly, making them potentially immune to human-made errors linked to morals and emotions. A particular field that would be impacted and changed the most will be caretaking of children and adults with disabilities. When disabilities come into play, humans tend to change their way of communication and emotions showed due to respect and manners, so they keep a calm and composed self during these interactions. This could be seen as considerate but at the same time offensive towards the disabled person, depending on the degree of the disability someone is showing. Humans also often differentiate disabilities in many categories and treat everyone differently while an advanced AI system would have all the knowledge and necessary training to understand all known disabilities and treat any kind of disabled individual like they need to be treated 100% of the time all the time. It would have databases on top of databases of research and theories about each and every single disabled individual in the facility/school. It would understand how to communicate more effectively with someone on one side of the spectrum and differently with another side of the spectrum, something a human could not easily recreate. It would not make emotional or moral errors like getting frustrated with patients or students, always being consistent and informing, no biases of any kind, no matter of gender, race, religion, or nationality.

## The Current State of Teaching and Caretaking

We owe our life to our teachers and caretakers for the effort they have put into shaping us into who we are today; we will forever be grateful for that. However, times are changing. A decade ago, learning and curiosity were at an all-time high, and the technology boom of the digital world was fascinating for most of the new generations. It led to industry-breaking social

interactions, the ability to share and consume content like never before, and intrigue was always looming in the air. As time passed, one thing became apparent: humans always choose the lazy and easy way out. It's who we are; it's how we have been shaped for thousands of years. However, this time we have computer devices with a higher processing power than the computers that sent astronauts to the Moon aboard the Saturn V space ship. That kind of power is not easy to comprehend, yet we keep that in our pocket every day, and sometimes we only use it as a flashlight.

The smartphone has been the most revolutionizing accessory ever invented for a human. It allows us to access information at record speed, convert speech into text and vice versa, communicate with someone at the other end of the planet, take pictures in an instant, and most importantly, change how we behave. With this came change into everything we know, but most importantly, information. The way we absorb information is no longer the same. Before, we had to read, double-check, and rewrite. If it wasn't on the news, it was probably not true. If the majority was talking about it, that was the truth. Today, the ability for everyone to share their opinions and ideas has made this 'assurance' that information is the truth almost nonexistent.

The problem with how humans handle this kind of technology is greed and monetization. No one really cares about the truth as long as it makes money. AI, however, does not have any attachment to monetary values. For it, money is just another 1 and 0, no other value, leading to a free and open thinker but also an accurate and consistent teacher. A human mind is able to absorb and organize so much information before we had enough, be that from work stress, family issues, everyday inconveniences, build-up tension, or even just pure spite. At any moment, humans can become erratic in any instance and make harsh and not well-thought-out decisions, leading to them, especially individuals that hold power in these institutions like teacher and caretakers, potentially ruin futures of dozen more individuals under their influence. These kinds of outbursts might lead to unfair treating of an individual, unfair/bias grading, poorly managed classes and sessions, poorly thought-out exams and grading methods, things that by all means are sometimes acceptable given the caretaker's well-being or mental state but not acceptable all the time.

### **The Rise of AI in Education and Caretaking**

The most powerful AI available to the public has just recently been gaining popularity. There are hundreds if not thousands of AI that are being developed and will eventually leave their prints on the internet, but the ones that already have are AI models like ChatGPT and Midjourney, some of the most advanced AI relative to their capabilities and uses. These are not the only ones but are some of the most used. ChatGPT is a large language model-based chatbot developed by OpenAI that acts like a very highly intelligent and consistent assistant, able to find and answer any kind of information you'd like. Given it has its limits like a data cutoff, meaning it cannot present real-time data and the drawbacks of a constantly developing AI which can be like inaccurate information or calculation, inaccurate dates, etc. Midjourney, on the other hand, is an image generative artificial intelligence program that can output any kind of image based on a prompt you give. It has revolutionized how people make art and how art is used. No longer being bound to time-consuming art, these new generative AI allow people to come up with more incredible ideas and create them in a matter of minutes. There are similar AI like DALL E, Firefly (Photoshop), DreamStudio (Stable Diffusion), and other generative AI that now focus on music and video generative are making their way slowly to the public.

“Online Tutoring: AI is transforming education through personalized learning experiences. Online tutoring platforms like San Diego University utilize AI for personalized learning, instant feedback, and adapting to individual student needs. Educational Software: AI enhances educational software in multiple ways. Applications like AppInventiv highlight AI-driven

benefits such as personalized learning, task automation, smart content creation, and adaptable access.” (University of San Diego)

We find ourselves amidst another technology boom, reminiscent of the era when smartphones emerged. Much like the initial criticisms directed at smartphones for their simplicity and the gradual rise in user addiction, the current technological wave that is AI is having similar claims thrown at it. Like ease of access, loss of credibility, ready to submit work especially in students, the ability for the AI code to be tampered with and display bias political or personal agendas. All of which are serious concerns but that should be approached in a manner of educating the public first rather than just shutting down or limiting these AI altogether. Today phones have been so normalized that it would be odd to not own one, and the same will happen to AI; the question is not if but when.

### **Advantages of AI in Teaching and Caretaking**

Voice Recognition Technology like speech-to-text applications, Google's Speech-to-Text or Microsoft Azure Speech, helps individuals with disabilities, such as those with dyslexia or motor impairments, convert spoken language into written text. Other software like Screen Reader JAWS, Natural Language Processing (NLP) for Writing Assistance like Grammarly helps with visual impairments by leveraging AI to read aloud the content displayed on a computer screen or use NLP to provide grammar and spelling suggestions to individuals with learning disabilities (Panjwani-Charania, Sahrish & Zhai, Xiaoming. 2023). This software not only offers incredible help for dealing with disabled individuals but is even more efficient and helpful for everyday students of all ages by simplifying and allowing for a better dissection of information and outlining.

AI applications that recognize facial expressions, like Affectiva, social robots like Milo, designed by Robokind, and Augmentative and Alternative Communication devices, such as Proloquo2Go or Predictable, use AI and machine learning to assist individuals with communication difficulties, including those with autism or speech disorders, for developing communication and social skills with interactive and predictable engagements and providing live feedback on emotional cues (Panjwani-Charania, Sahrish & Zhai, Xiaoming. 2023).

Adaptive Intelligent tutoring/learning systems, like DreamBox, Knewton, and Carnegie Learning, utilize AI algorithms to create personal educational instructions and content based on the different learning styles and progress of different students. These AI can also adapt with individual students based on their performance and can support students with different and various learning needs (Panjwani-Charania, Sahrish & Zhai, Xiaoming. 2023).

One of the most promising techs of modern times is Augmented Reality (AR) and Virtual Reality (VR), and this branch has not stayed untouched by AI. Given the incredible number of challenges that come with this kind of technology and its manufacturing, the feature of AI in VR/AR is something that is already being done by companies like Microsoft, Meta, Sony, Apple, etc. Most of these advancements are seen in video game hardware like the Kinect, Meta Quest, PlayStation VR, Apple Vision where the large amount of data produced by human movements can be great training data for advanced AI to understand human motor skills and better mimic them, also helping individuals with motor impairments to interact with devices through different types of body movements and can be further integrated into prosthetics for more fluent movement.

Integrating all of the mentioned technologies into single bodies or entities would be the pinnacle of human ingenuity, the creation of a Human Intelligence Virtual Entity (HIVE) unit would change the world forever.

## **Ethical and Moral Considerations**

“The development of full artificial intelligence could spell the end of the human race. . . . It would take off on its own and redesign itself at an ever-increasing rate. Humans, who are limited by slow biological evolution, couldn’t compete and would be superseded.” (Stephen Hawking). AI has been haunted by decades of misconception and false information, causing ethical and moral considerations to climb to the top of its resolution board. AI is never going to replace humans; that has never been the point. The point of AI is to remove the need for tedious and time-consuming repetitive tasks that tire a human psychologically. The use of AI doesn’t mean the end of humans; rather, humans now, instead of being the instructors in a course, the caretaker of disabled individuals, are the evaluator, the one in charge of all AI directives and results, the one that will, in the end, make out if the AI has come to a complete and accurate assumption about individuals, topics, and solutions. The human touch will be very important in teaching and caretaking as it would reinforce emotional support, empathy, and critical moral decisions; however, the other parts of caretaking would be much more efficient if done by AI. Jobs will be lost, but if humans start to understand that this is the future of working, new concepts and ideas about new creative jobs will flourish. Humans will not become obsolete; rather, they will be freer.

The biggest risk with AI comes in the form of misinformation and abuse of power. Individuals who have access to the training database of these AI models have the power to change their directive and force the AI to output biased and twisted information that can lead individuals to different and untruthful conclusions. "The biggest risks of integrating these algorithms in K-12 contexts are: (a) perpetuating existing systemic bias and discrimination, (b) perpetuating unfairness for students from mostly disadvantaged and marginalized groups, and (c) amplifying racism, sexism, xenophobia, and other forms of injustice and inequity." (Miller FA, Katz JH, Gans R.).

As mentioned before, AI is seen as the next smartphone technology that can disrupt even further the spread of credible and accurate information. Therefore, keeping the creators of these AI in check and analyzing the outputs of the AI ourselves, while using previously attained knowledge from credible sources, we can detect untruthful and falsified info in their outputs. The public has all the power; we control what is consumed and what is not. If we can keep educating younger generations in more efficient ways, common sense and respect will dominate and shape the newer generations, while AI will be just an assistant, a highly intelligent and incredibly fast assistant.

## Case Studies and Examples

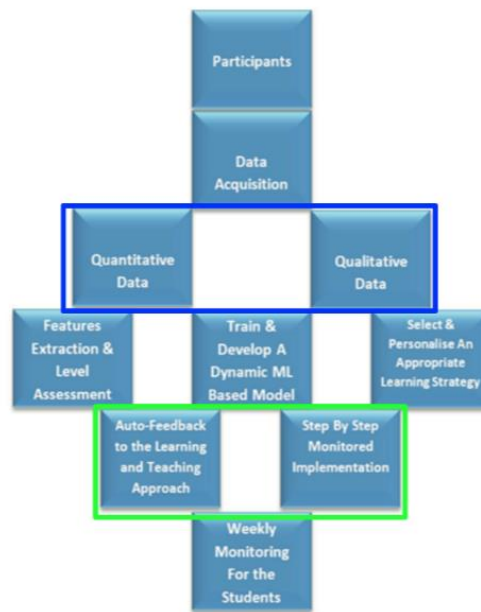


Figure 21.4. Proposed Model to Support SWLD with inputs outlined in blue and outputs outlined in green. Modified from: *A proposed machine learning based approach to support students with learning difficulties in the post-pandemic norm*, Sharif & Elmedany (2022), 2022 IEEE Global Engineering Education Conference (EDUCON)

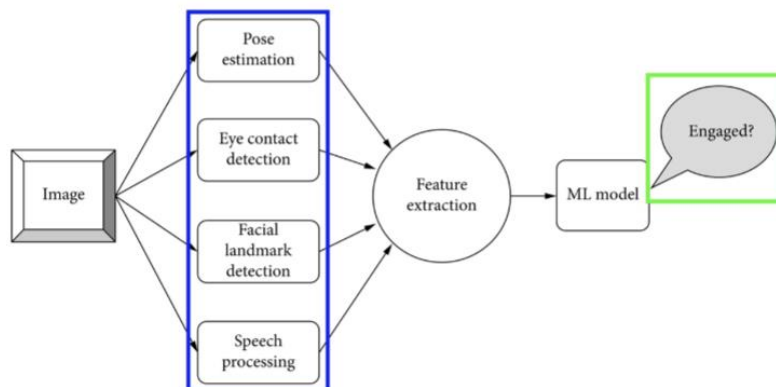


Figure 21.2. Diagram of Methodology with inputs outlined in blue and outputs outlined in green. Modified from "Estimating children engagement interacting with robots in special education using machine learning," by Papakostas et al., 2021, *Mathematical Problems in Engineering*, Copyright 2021 by George A. Papakostas et al.

## Potential Challenges and Concerns

Some challenges accompanying these changes will include institutions' ability to adapt to these new teaching and caretaking methods. Teachers and caretakers themselves may find it difficult to adjust to such a significant shift. Education on these innovations will be mandatory for individuals, and those with prior AI knowledge will enjoy an advantage, potentially earning promotions to oversight positions. With widespread AI integration, concerns about job displacement and privacy will rise. However, this perspective is just the beginning of this era, and the outcomes and potentials may change any day. What is currently considered a normal

job might be deemed irrelevant in the future. A future that values creativity and imagination is in the making.

## Conclusion

While AI advancements have long been confined to science fiction, we have entered an era where this is no longer the case. Artificial Intelligence progress is accelerating daily, and the models we have at this moment are the weakest versions that will ever exist from now on. We cannot halt the evolution of AI; we can only steer it toward a more perfect version of ourselves. By embedding this technology at the core of all human ingenuity—education—and introducing it to individuals leading lives distinct from others, we are shaping the future behavior and thinking patterns of AI. If we persist in training it for the greater good, fostering creativity, and focusing on knowledge rather than destruction, we are nurturing an Artificial Intelligence version that will remain devoted to humanity.

“Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks.” (Stephen Hawking).

## References

- [1] Panjwani-Charania, Sahrish & Zhai, Xiaoming. (2023). AI for Students with Learning Disabilities: A Systematic Review.
- [2] Akgun S, Greenhow C. Artificial intelligence in education: Addressing ethical challenges in K-12 settings. *AI Ethics*. 2022;2(3):431-440. doi: 10.1007/s43681-021-00096-7. Epub 2021 Sep 22. PMID: 34790956; PMCID: PMC8455229.
- [3] “43 Examples of Artificial Intelligence in Education.” University of San Diego Online Degrees, 28 Sept. 2023, [onlinedegrees.sandiego.edu/artificial-intelligence-education/](https://onlinedegrees.sandiego.edu/artificial-intelligence-education/)
- [4] Miller FA, Katz JH, Gans R. The OD imperative to add inclusion to the algorithms of artificial intelligence. *OD Practitioner*. 2018;5(1):6–12. [Google Scholar]
- [5] Jiahong Su, Davy Tsz Kit Ng, Samuel Kai Wah Chu, Artificial Intelligence (AI) Literacy in Early Childhood Education: The Challenges and Opportunities, *Computers and Education: Artificial Intelligence*, Volume 4, 2023, 100124, ISSN 2666-920X, <https://doi.org/10.1016/j.caeai.2023.100124>.
- [6] Holmes, Wayne & Bialik, Maya & Fadel, Charles. (2019). *Artificial Intelligence in Education. Promise and Implications for Teaching and Learning.*