

Artificial Intelligence Involving In Education: Problems It Caused and Strategies To Improve

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Abstract. Due to the rapid development of artificial intelligence, it has brought more convenience to human life. Artificial intelligence has additionally been employed for educational purposes at the same time since it can significantly impact both the physical and mental development of individuals. The emergence of artificial intelligence brings possibilities for the implementation of personalized learning, different needs of students may be met. Teachers will also reduce some corresponding workload at the same time, especially for grading tests and answering students' questions. However, the emergence of artificial intelligence cannot only bring benefits but at the same time, many problems need to be solved. After understanding the situation and problems, how to solve them. Therefore, This article proposes three problems caused by the use of artificial intelligence in teaching, then uses essays from other authors as support, and gives three solution strategies to maximize the effects of artificial intelligence in education.

Keywords: Artificial Intelligence; AI; education.

1. Introduction

Nowadays, because of its rapid development, artificial intelligence has been widely used in society, especially by educational institutions, in various environments and situations [1]. Because it creates chances for educators and students to teach and learn much more effectively. Education should be individualized. As independent individuals, students should have independent thoughts and unique ways of thinking. Educationalist Jerome Bruner also mentioned that teachers should allow students to become autonomous and self-propelled thinkers. With the participation of artificial intelligence, teachers can adjust according to the different desires of students [2]. Personalized education is the ultimate goal of education, but it is pretty challenging to achieve in the context of traditional education models [3]. If the teacher's teaching speed is too slow, or the teacher keeps struggling with specific knowledge for a long time, students who have learned this before or could comprehend it fast might feel bored by the teacher's explanation. If the teacher's teaching speed is very fast, students with a relatively weak foundation or slow comprehension will not be able to keep up with the teacher[4]. Therefore, compared with the traditional education model, the intervention of artificial intelligence provides students with a more efficient learning method. AI-involved teaching model provides students with a more efficient learning method than traditional education. In addition, after artificial intelligence is concluded in the classroom, some of the tedious responsibilities of teachers are separated, and they have more time to assist in the personalized education of students [2]. Aside from very characteristic educational applications, what most artificial intelligence can do is automatic scoring. It simultaneously gives answers and related knowledge and explains why this is the correct answer. Furthermore, it can also recommend suitable learning methods to different students through complex data analysis [5]. Teachers and parents cannot monitor and record students' learning and learning progress anytime and anywhere. Artificial intelligence can do this, and it can even analyze under what specific situation or time interval students are most likely to forget the knowledge and repeat the review at a specific situation or time[5]. However, other issues come with the advancement of artificial intelligence. This article discusses the problems brought about by artificial intelligence and how people use it to get positive results.

2. Problems

Without any doubt, artificial intelligence does bring considerable opportunities for educators and students in the process of teaching and learning, but several issues might arise when artificial intelligence is used in the classroom.

2.1. Accuracy

The first problem is that the calculation of data is not accurate. Artificial intelligence, as a branch of computer science, models human thought [6], but the causal relationship cannot be established only by the detection and analysis made through students' learning and problem-solving processes. However, the accuracy of an artificial intelligence product needs to be higher, or it is difficult for such a system to be widely used in the education field [4]. Consumers, that is, students, may not be able to solve their doubts if they use such inaccurate artificial intelligence to help them figure out some questions, On the contrary, it may cause students to become more confused. With such imprecise calculations, obtaining a personalized learning plan from the final assessment is unrealistic. Even if students are provided with a learning plan, they cannot improve themselves through such an unprofessional plan.

2.2. Pressure

The second problem is the possibility of increased pressure on students and teachers as a result of the usage of such artificial intelligence systems in the educational process. Because of the pressure of "being monitored," students also increase their interference factors in the process of learning. For teachers, the results of students' detection will also become an essential criterion for teachers to be judged [7]. Besides, the things that teachers need to do and to learn are also increased at the same time. Schools may give teachers courses on how artificial intelligence works. With the addition of artificial intelligence to the classroom, teachers need to change their accustomed teaching methods of teaching to cooperate with artificial intelligence. This is very difficult for middle-aged and elderly teachers. Not all teachers can get used to using technical devices quickly, so this will bring a much heavier workload for those teachers [8]. Other artificial intelligence, such as ChatGPT, can even think and write instead of students finishing it on their own, and they can even produce homework or essays faster and more thoughtfully. Teachers sometimes cannot judge whether students plagiarize [9]. Teachers may need to spend more time thinking about how to find a balance in the classroom where students can use similar artificial intelligence but not plagiarize. Now, teachers not only need to think about how to coexist with the artificial intelligence that will be used in the classroom but also think about how to coexist with the artificial intelligence that students can have access to after class.

2.3. Human Rights

Finally, when AI systems are involved, the privacy of students may be violated because they are constantly monitored. Some artificial intelligence can see whether students are concentrating on course materials through the camera and send the report to the mobile phones of teachers and parents. This will make learning painful to students, which increases the pressure on students invisibly and is also a factor that distracts students. Parents, teachers, and artificial intelligence only provide students with a possible way to learn, get better results, and gain experience. Nevertheless, learning is still a matter of the students themselves, and their learning environment, method, and even the result should be respected. In addition, some software focuses on educational issues and ignores the privacy issues caused in the process, such as when completing online homework or when uploading and downloading files [7]. Even if some students' data privacy is legally protected, there are still some personal privacy that are not protected, such as personal data collected from social media websites [10].

3. Suggestion on Maximum the Effect of AI

After reading through these papers, the most crucial point is not to rely too much on using artificial intelligence in the educational process. Education cannot be accomplished only through technology. Software intelligence assists educators in making personalized learning arrangements for students, and humans are still the leaders. It is unrealistic to rely too much on artificial intelligence in the actual teaching process.

3.1. Ensure the Accuracy

Even though artificial intelligence is involved in education, the process still requires human-to-human communication between teachers and students, parents and students, and even between students and students. Educators can move towards the goal more efficiently by combining their daily observations of learners with the analysis from artificial intelligence. Such a combination can also allow humans and artificial intelligence to complement each other, achieving more accurate results than operating alone. In the teaching process, there is only human or artificial intelligence is not accurate. If there are only humans, when students turn to middle school, most of those students and parents are powerless when they are facing unfamiliar learning models and learning content, and the most efficient learning methods cannot be developed. The teacher cannot set a plan for each student without any help. However, if there is only artificial intelligence, it can only recommend more effective learning methods to students based on its data collection and calculations. However, whether students should utilize these methods should always be made by students themselves, their parents, and their teachers.

3.2. Release the Pressure

The addition of artificial intelligence should be gradual, and this is a slow process. Furthermore, because of the slowness of this process, teachers of all ages have the opportunity to adapt to this new product and new situation. Both teachers and students can control the pace and pace of teaching and learning. Schools should not force all teachers to use artificial intelligence in the classroom. Instead, any teaching method, whether it is novel or conservative, should be respected. So, in this way, it is not going to happen that some excellent middle-aged and elderly teachers be eliminated or resign because they cannot accept and adapt to such teaching methods due to the abrupt emergence of artificial intelligence. This is completely upside down, which may cause the school to lose experienced teachers. Then, if students cannot adopt those innovative methods, it will be awful, but the tools to help them study have become the pressure on students.

3.3. Optimize the Positive Result

Finally, it is also necessary to properly use artificial intelligence in teaching. Before integrating artificial intelligence into traditional classrooms, the leadership of school and teachers should clearly understand the pros and cons of using artificial intelligence and should also think about how to use artificial intelligence correctly to obtain positive results, instead of involving artificial intelligence in the existing teaching environment without a second thought. The purpose of artificial intelligence in participating in traditional classrooms is to assist teachers and students, so if it does not have auxiliary effects on some teachers and students, they should even abandon their use of artificial intelligence in the time when they are teaching and learning. At the same time, the school should also inform teachers, students, and parents about how to use artificial intelligence properly and morally. Artificial intelligence is added to education to help students learn more efficiently and save time and energy for teachers and parents rather than as a tool to monitor children.

4. Conclusion

Without any doubt, artificial intelligence can bring non-negligible benefits to teachers and students in education, personalizing general learning. In today's classroom, teachers cannot pay attention to

the learning situation of each student in detail, and artificial intelligence makes this problem feasible. This relieves part of the responsibility of the teacher and provides more learning possibilities for the students. There is less homework that teachers need to correct, and students can solve their problems at any time without considering whether it is an appropriate time for the teacher. However, artificial intelligence also brings some problems. First, the calculation of artificial intelligence cannot accurately record the reasons for students' behavior, which makes it unable to provide students with accurate enough advice. Second, it still increases the pressure on teachers and students in other ways. Third, students' privacy cannot be guaranteed during the use process. At the same time, it also aroused the public's thinking about how to optimize the classroom through the addition of artificial intelligence. First of all, the focus is still on people. Even if artificial intelligence is concluded, people must distinguish between primary and secondary. Then, artificial intelligence is infiltrated into the classroom bit by bit. It must be timely for both teachers and students to adapt. Finally, only by understanding the shortcomings and limits of artificial intelligence can people use it better.

References

- [1] Alam A. Should robots replace teachers? Mobilisation of AI and learning analytics in education. 2021 International Conference on Advances in Computing, Communication, and Control (ICAC3). IEEE, 2021, 1-12.
- [2] Chen X, Xie H, Zou D, et al. Application and theory gaps during the rise of artificial intelligence in education. *Computers and Education: Artificial Intelligence*, 2020, 1, 100002.
- [3] Xu L. The dilemma and countermeasures of AI in educational application. *Proceedings of the 2020 4th International Conference on Computer Science and Artificial Intelligence*, 2020, 289-294.
- [4] Chassignol M, Khoroshavin A, Klimova A, et al. Artificial Intelligence trends in education: a narrative overview. *Procedia Computer Science*, 2018, 136, 16-24.
- [5] Owoc M L, Sawicka A, Weichbroth P. Artificial intelligence technologies in education: benefits, challenges, and strategies of implementation. *IFIP International Workshop on Artificial Intelligence for Knowledge Management*. Cham: Springer International Publishing, 2019, 37-58.
- [6] Li H, Wang H. Research on the application of artificial intelligence in education. 2020 15th International Conference on Computer Science & Education (ICCSE). IEEE, 2020: 589-591.
- [7] Berendt B, Littlejohn A, Blakemore M. AI in education: Learner choice and fundamental rights. *Learning, Media and Technology*, 2020, 45(3), 312-324.
- [8] Chiu T K F. A holistic approach to the design of artificial intelligence (AI) education for K-12 schools. *TechTrends*, 2021, 65(5), 796-807.
- [9] Mhlanga D. Open AI in education, the responsible and ethical use of ChatGPT towards lifelong learning. *Education, the Responsible and Ethical Use of ChatGPT Towards Lifelong Learning*, 2023.
- [10] Prinsloo P, Slade S, Khalil M. Multimodal learning analytics—In-between student privacy and encroachment: A systematic review. *British Journal of Educational Technology*, 2023.