

Impact of AI on Learning Disable (LD) students

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Abstract:

Artificial Intelligence (AI) in education help to show student wise educational pathway, directs administrative tasks for educators, which results into improvement of students in many aspects. Various tools of AI such as speechify, Dragon, Copilot etc. support students having learning disabilities. These tools provide language learning support such as it converts text into audio, it can help to organize & visualize ideas and help to bridge educational gaps. Present study shows impact of artificial intelligence on Learning disable students having dyscalculi, dyslexia, and dysgraphia. Traditional teaching in a typical classroom has become challenging due to the sophisticated pattern of the curriculum also teaching is a major difficulty for educators when it comes to special children or kids with learning disabilities.

AI helps educator in various ways such as, content creation, to generate curriculum materials, to creative lesson plans, provide language learning support and so on.

Results suggest that using different kinds of tools of AI to teach LD students is very beneficial to teachers.

Keywords: Artificial intelligence, LD, dyscalculia, dyslexia dysgraphia, lesson plan.

Introduction:

This current era is known as the Era of technology. Everything is changing rapidly. Like all other aspects of life the educational system is also changing rapidly. The traditional teaching methods are being replaced by digital and automated systems slowly. This change has given central position to the Artificial intelligence in the field of education. This newly introduced technology in education sector is not only making the learning process simple & effortless but also making education, student centered, accessible and effective.

Artificial intelligence in education is a specialized area of educational technology that studies how to use tools of artificial intelligence to grow & established learning environments. Learning disability influences various skill set of children which consists of listening, thinking, speaking ability, reasoning ability, reading, writing, spelling and problems in Math. For these students AI has created substantial needs for special education system. Learning disability not only impacts students in wide range of academic skills but can also impact their emotions & social abilities, experience more negative emotions such as depression & loneliness in class room due to unable to perform normal functions of English & mathematics as compared to other students.

The Need for AI in Special Education:

AI can identify strengths and weaknesses of students to generate curriculum or learning path. The path or curriculum designed according to their specific needs and interests, which may increase their motivation.

Tools like Natural reader & Voice Dream reader convert text-to-speech and speech-to-text which assist students having dyslexia and motor skill challenges, respectively.

AI help educators to identify learning obstacles early and take action to improve learning environment.

AI tool generates audio descriptions for images and videos, making visual materials accessible to students with visual impairments.

Special education course prepares educators to support individuals with diverse learning, physical, and intellectual needs through specialized teaching strategies as well as students having unique learning needs due to physical, mental, emotional, or behavioral conditions.

These students often require individualized educational programs to meet their specific learning needs. Traditional classroom teaching and regular teaching methodologies not proved to satisfy diverse needs of LD and special students.

The application of AI in special education can help address above challenges. AI-powered tools and technologies can provide student wise learning experiences, aid in skill development, and improve accessibility for students with special needs.

Role of AI in the education of disabled students:

The sector of education has undergone a transformation, thanks to AI. Particularly for students with physical and mental impairments. This technology not just make teaching and learning process easy & suitable for educator & students but also provide ease in learning opportunity to student according to their individual needs.

Artificial intelligence is providing helpful resources in providing quality education to disabled student, despite of physical disability and limited listening Skills. Teaching pedagogy such as speech to text, smart readers etc. facilitating the learning process of students with disabilities significantly. These Technologies make information transmission more effective. By the application of artificial intelligence in educational institutions Students with disabilities are beginning to receive equal educational opportunities, and it is making the concept of inclusive education stronger.

AI-driven adaptive learning platforms like Dream Box Learning and Knewton tailor educational content to the individual needs of students with learning disabilities. These platforms guarantee that students receive the right challenges and scaffolds by varying the degree of difficulty and offering individualized support.

Significance of present study:

AI holds immense potential in the field of special education. It can offer personalized learning experiences, adapting to the unique needs and capabilities of each student. This personalization can maximize learning outcomes and improves skill set development.

AI-powered speech recognition tools like Google cloud, Open AI Whisper, Dragon professional can help students in speech impairments and communicate effectively. Similarly, AI-powered predictive text tool, Lexy can assist students with dyslexia in writing.

Moreover, AI-powered tools can translate text into speech speechify for visually impaired students and interpret speech into text otter ai, Google live Transcribe for hearing-impaired students.

Furthermore, AI algorithms enable computers to analyze data, identify learning patterns, make predictions, and act autonomously without human intervention and suggest personalized learning paths.

The potential of AI in special education extends beyond these applications. Continuous advancements in AI technology promise even more innovative solutions to address the challenges in special education.

The integration of AI in special education can transform the way special education is delivered, making it more personalized, effective, and inclusive.

Discussion:

Present study shows that students with learning disabilities when use an adaptive learning platforms they shows improved academic performance in subjects like Math and English reading. One to one feedback and personalized or specialized instruction help these students to acquire complex concepts more effectively, leading to better retention and understanding.

Conclusion:

This has been made clear through this study that artificial intelligence is just not a technology but it is a teaching revolution that has the ability to make education accessible to all, and to provide education according to the need based of every student. It has been emerged as a new hope for learning disabled students which decreased many obstacles in the way of learning.

The research has declared that the AI based learning resources not only providing learning opportunities for LD students but also encourage them to learn according to their needs, pace, interest and abilities. These tools of AI are proving to be very helpful for teachers also, because with its help they can prepare specific strategies according to need of every student Hence this research also has been proved that use of this technology is not possible without some moral, social and practical challenges.

One of the most important point of this research is that the effective use of artificial intelligence is not only depend on technology but also on human conscious and training too. A teacher should have moral insight as well as new technology so that they can use it for the human and educational objectives. Similarly the educational policy makers should set clear guidelines, training plans and equal access measures. It can be understood by the result of the study that if AI can be used in the field of education wisely, equally and with the moral boundaries then it not only raise the standard of disabled students' education but it will make education more fair and inclusive. It can be concluded that the artificial intelligence is the future of education but its heart is still human being. If we maintain this balance, then AI in education will not only open the door but it will become a new ray for learning disabled students.

Reference:

1. "Artificial Intelligence and the Future of Teaching and Learning" (PDF). Office of Educational Technology. May 2023.
2. Ahmed, S., Rahman, M. S., Kaiser, M. S., & Hosen, A. S. (2025). Advancing 3.personalized and inclusive education for students with disability through artificial intelligence: perspectives, challenges, and opportunities. *Digital*, 5(2), 11. [2].
4. Rice, M. F., & Dunn, S. (2023). The use of artificial intelligence with students with identified disabilities: A systematic review with critique. *Computers in the Schools*, 40(4), 370-390.
5. Ms. Manisha Jana (2025) The Role of AI in Individualized Learning of Special Children: A Qualitative Study.
6. Smith, J., & Okolo, C. (2021). Impact of Textto-Speech Technology on Students with Dyslexia. *Reading & Writing Quarterly*, 37(1), 28-45.
7. Wang, Y., & Heffernan, N. (2019). DreamBox Learning: Improving Math Skills for Students with Learning Disabilities. *Journal of Educational Research*, 112(3), 307-319.
8. Abstract
9. Abstract
10. Education (pp. xx-xx). Oxford, UK: Oxford University Press
11. Education (pp. xx-xx). Oxford, UK: Oxford University Press
12. Panjwani-Charani, S. & Zhai, X. (in press). AI for Students with Learning Disabilities: A
13. Panjwani-Charani, S. & Zhai, X. (in press). AI for Students with Learning Disabilities: A
14. Sahrish Panjwani-Charania & Xiaoming Zhai
15. Sahrish Panjwani-Charania & Xiaoming Zhai
16. Systematic Review. In X. Zhai & J. Krajcik (Eds.), *Uses of Artificial Intelligence in STEM*
17. Systematic Review. In X. Zhai & J. Krajcik (Eds.), *Uses of Artificial Intelligence in STEM*
18. This review study aims to uncover how artificial intelligent
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