Using Artificial Intelligence to Help Children with Special Needs Learn Better in Inclusive Schools

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Abstract

Inclusive education means teaching all children together in the same classroom, no matter their abilities or challenges. This includes children with Special Educational Needs and Disabilities (SEND). Teaching in such classrooms can be difficult, as every child learns in a different way. Teachers often need extra support to meet the needs of all students. One powerful tool that can help is Artificial Intelligence (AI). This article explores how AI can be used to support the learning of SEND children in inclusive schools. AI can help teachers understand each child's learning style, strengths, and areas where they need help. For example, AI tools can suggest personalized learning activities, read texts aloud, convert speech to text, or provide instant feedback. AI-powered apps can also help children with difficulties in reading, writing, speaking, or understanding. These tools make learning more engaging and less stressful for SEND students. The article also looks at the benefits and challenges of using AI in the classroom. On the positive side, AI can save time for teachers, provide real-time support to students, and create more equal learning opportunities. On the other hand, there are concerns about privacy, fairness, cost, and the need for proper teacher training. In the end, this article highlights that AI is not a replacement for teachers but a helpful assistant. When used wisely, AI can make learning easier and more enjoyable for children with special needs, while also helping teachers manage their classrooms better. Schools, parents, and education leaders must work together to make sure AI is used in safe and meaningful ways to support inclusive education.

Keywords: Artificial intelligence, inclusive education, SEND, special needs children, educational technology.

Introduction

Inclusive education is a system where students with and without disabilities learn together in the same classrooms. It is based on the belief that every child has the right to quality education, no matter their background, ability, or disability. However, teaching students with Special Educational Needs and Disabilities (SEND) in inclusive classrooms can be challenging. Teachers must adapt lessons, materials, and teaching styles to meet a wide variety of learning needs. This often requires extra support and resources that are not always available.

Artificial Intelligence (AI) offers promising solutions to some of these challenges. AI technologies can help teachers better understand and respond to students' individual learning needs. By using data and smart algorithms, AI tools can personalize education, giving children with SEND the support they need to succeed. This article explores how AI can be used in inclusive education settings to help SEND children learn better, while also making teaching more effective and inclusive.

Literature Review

Many studies have explored the use of technology in supporting students with special needs. Research shows that digital tools, including speech-to-text apps, interactive learning games, and text-to-speech software, can enhance student engagement and learning outcomes (Smith & Anderson, 2018). More recent studies have focused on AI-based educational tools, showing their potential to provide personalized learning paths for students, including those with learning disabilities (Brown et al., 2020).

According to Kumar and Sharma (2022), AI can adapt educational content in real time, helping children with attention deficits or learning difficulties stay on task. Other researchers highlight how AI-based speech recognition and language processing tools can assist students with dyslexia or speech impairments (Jones & Patel, 2021). While these technologies are promising, there is still a lack of research focusing specifically on their role in inclusive classroom environments with both SEND and non-SEND students.

At a public primary school in Bangalore, India, educators implemented an AI-driven adaptive learning platform designed to personalize reading instruction based on individual student proficiency levels. This aligns with broader research that highlights the potential of AI to tailor educational content to diverse learner needs (Holmes et al., 2019). In this case, the platform dynamically adjusted reading material

difficulty and incorporated multisensory features such as text-to-speech and audio explanations. Notably, one student with dyslexia, who had previously experienced persistent challenges with reading comprehension, demonstrated marked improvement after consistent use of the system for three months. The AI tool's ability to deliver differentiated instruction and immediate feedback allowed the student to engage with content at an appropriate cognitive level, echoing findings by Rose and Dalton (2009) on the benefits of Universal Design for Learning (UDL) approaches supported by technology. This case underscores the role of AI not as a replacement for teacher intervention, but as a complementary tool that can facilitate inclusive learning experiences, particularly for students with specific learning difficulties.

In the United States, middle school educators piloted an AI-powered chatbot to support students with autism spectrum disorder (ASD) in developing conversational and social-emotional skills. The chatbot was programmed to simulate routine classroom and peer interaction scenarios, offering a safe, consistent, and judgment-free space for students to practice language and social cues. This intervention aligns with prior research suggesting that AI-based conversational agents can serve as effective tools for social skills training in neurodiverse populations (Kunda & Goel, 2011). Teachers reported that students who interacted regularly with the chatbot displayed greater confidence during classroom discussions and improved peer relationships. These findings reflect broader trends in leveraging AI to enhance social communication for individuals with ASD, as documented by studies highlighting the potential of virtual agents and intelligent tutoring systems (Grynszpan et al., 2014). This case reinforces the value of AI as a supplementary tool in inclusive education, particularly for supporting students whose social development may benefit from structured, adaptive interaction practice.

Case Studies

Case Study 1: AI-Powered Learning in a Primary School

At a public primary school in Bangalore, India, teachers introduced an AI-based learning platform that adjusted reading materials based on each student's reading level. One student with dyslexia, who previously struggled to keep up with classwork, showed significant improvement in reading comprehension after using the platform for three months. The tool read texts aloud, provided audio explanations, and adjusted the difficulty level automatically.

Case Study 2: Chatbots for Social Skills

In a U.S. middle school, educators used an AI chatbot to help students with autism practice conversational skills. The chatbot simulated common classroom and social scenarios, helping students become more confident in real-life interactions. Teachers reported improvements in peer interactions and classroom participation for students using the chatbot regularly.

Challenges

Despite the benefits, using AI in inclusive education comes with challenges. One major issue is accessibility—not all schools have the funds or technical support needed to use AI tools effectively. Another concern is data privacy. AI tools often collect data about students, which raises questions about how this data is stored and who can access it. There is also the risk of bias in AI systems if they are not trained on diverse datasets.
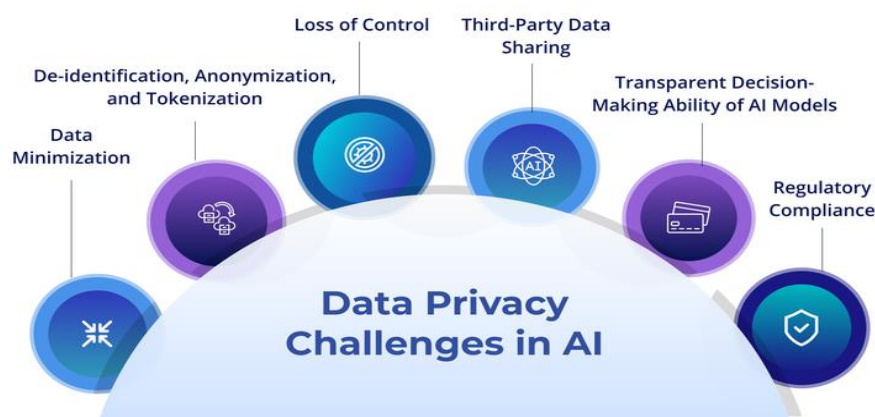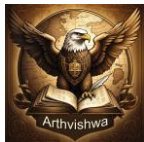

Fig.-1 Understanding Data Privacy in AI

Teacher training is another important issue. Many teachers are not familiar with AI tools or how to integrate them into their classrooms. Without proper training, the potential of AI to

support inclusive education cannot be fully realized. Finally, AI should never be seen as a replacement for human interaction. Teachers play a critical role in supporting emotional and social development, which AI cannot replicate. Artificial Intelligence has the potential to transform inclusive education by making learning more accessible, personalized, and engaging for children with Special Educational Needs and Disabilities (SEND). It can help teachers better understand individual learning patterns, reduce their workload, and offer real-time interventions tailored to each student. However, the success of AI in inclusive settings depends heavily on responsible use, teacher training, and ensuring equitable access to technology.

Fig-2 AI in Inclusive Learning

While AI cannot replace the essential human touch that teachers provide, it can serve as a powerful support tool to enhance educational practices. Stakeholders—including school administrators, educators, policymakers, and parents—must work together to create policies and practices that ensure safe, ethical, and inclusive use of AI technologies in classrooms. With thoughtful implementation, AI can play a vital role in shaping a more inclusive future for education, where every child, regardless of ability, has a fair chance to succeed.

Conclusion

Artificial Intelligence has the potential to transform inclusive education by making learning more accessible, personalized, and engaging for children with Special Educational Needs and Disabilities (SEND). It can help teachers better understand individual learning patterns, reduce their workload, and offer real-time interventions tailored to each student. However, the success of AI in inclusive settings depends heavily on responsible use, teacher training, and ensuring equitable access to technology.

While AI cannot replace the essential human touch that teachers provide, it can serve as a powerful support tool to enhance educational practices. Stakeholders—including school administrators, educators, policymakers, and parents—must work together to create policies and practices that ensure safe, ethical, and inclusive use of AI technologies in classrooms. With thoughtful implementation, AI can play a vital role in shaping a more inclusive future for education, where every child, regardless of ability, has a fair chance to succeed.

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