ASSISTIVE DEVICES FOR ACCESS TO EDUCATIONAL RESOURCES FOR STUDENTS WITH DISABILITIES

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Abstract

The integration of assistive devices has significantly improved the access to educational resources for students with disabilities. Assistive devices have been designed to enhance the learning experience of students with disabilities by eliminating physical and communication barriers. This abstract aims to explore the type of assistive devices which improve the access to educational resources for students with disabilities .Assistive devices such as screen readers, speech-to-text, text-to-speech, Braille displays, and speech recognition software, have transformed the educational landscape for students with visual and hearing impairments. These technologies enable students to access digital resources and communicate effectively with their peers and instructors. Assistive devices have also revolutionized the learning experience for students with mobility impairments. Devices such as wheelchair lifts, adapted keyboards, and alternative pointing devices, have made it possible for students with mobility impairments to access and interact with classroom technology and resources. These technologies enable students to participate in class activities, access digital resources, and communicate with their peers.

Keywords: Assistive devices, educational resources, Communication and physical barriers, students with disabilities.

Introduction:

Children with disabilities are among the most stigmatized and excluded groups of children around the world. They are likely to have poorer health, less education, less economic opportunity when they grow up, and are more likely to live in poverty and deal with greater inequalities than their peers without disabilities. It is estimated that approximately 1 in every 10 children in the world has a disability and less than 10% of children with disabilities in low-income countries go to school. Besides poverty and prejudice, the lack of access to assistive technology, as well as inaccessible transport and

school environments are major barriers, which restrict children with disabilities to access education and to participate in the community.

Access to education is a fundamental human right, but unfortunately, many students with disabilities often face significant barriers in accessing educational resources. Assistive devices have become increasingly prevalent in recent years and are increasingly recognized as a way to improve access to educational resources for students with disabilities. Assistive devices refer to any technology or tool that can help individuals with disabilities to perform tasks that would be difficult or impossible otherwise. They include a wide range of products such as screen readers, alternative keyboards, and speech recognition software, among others. These devices have revolutionized the way people with disabilities interact with the world and have opened up a new world of possibilities for students with disabilities, including access to education. In the past, students with disabilities often faced significant challenges in accessing educational resources. Many traditional educational resources were not designed to accommodate the needs of students with disabilities. For instance, textbooks were not always available in Braille or audio formats, and physical barriers such as stairs and narrow doorways made it difficult for students with mobility impairments to navigate school buildings. This often resulted in students with disabilities falling behind their peers academically, and in some cases, being excluded from education altogether.

However, the advent of assistive devices has changed the educational landscape for students with disabilities. Assistive devices have made it possible for students with disabilities to access educational resources that were previously unavailable to them. For instance, screen readers can read out textbooks, documents, and other materials, enabling students with visual impairments to access educational resources in the same way as their sighted peers. Similarly, speech recognition software can enable students with physical disabilities to type and communicate with their peers and teachers more easily. The Persons with Disabilities (PWD) Act, 1995, and the Rights of Persons with Disabilities (RPWD) Act, 2016, recognize the importance of equal access to education for students with disabilities. These acts mandate that educational institutions provide reasonable accommodations and assistive devices to ensure equal access to educational resources for students with disabilities.

Assistive devices have also made it possible for students with disabilities to participate in classroom activities that would have been difficult or impossible without them. For example, alternative keyboards can help students with physical disabilities to type, and

communication devices can help students with speech impairments to communicate with their peers and teachers more effectively. These devices have made it possible for students with disabilities to participate fully in classroom activities and to have the same educational opportunities as their non-disabled peers. The impact of assistive devices on improving access to educational resources for students with disabilities is undeniable. These devices have enabled students with disabilities to access educational resources that were previously unavailable to them and have opened up new opportunities for learning and participation in the classroom. They have also helped to bridge the gap between students with disabilities and their non-disabled peers, enabling them to participate fully in classroom activities and to have the same educational opportunities.

Background of the study:

Banerjee & Chakraborty (2017) reviewed the use of assistive technology in inclusive education and its impact on improving access to educational resources for students with disabilities. They found that assistive technology can support students with disabilities in a range of academic and non-academic areas, including communication, literacy, and mobility.

Adesope & Bayliss (2018) explored the effectiveness of assistive technology in supporting students with disabilities. The authors found that assistive technology can improve access to educational resources for students with disabilities, increase their engagement in learning, and enhance their academic performance. However, they also note that more research is needed to fully understand the impact of assistive technology on student outcomes.

Goldstein (2018) studied the effectiveness of assistive technology in improving access to educational resources for students with disabilities. Researcher concluded that assistive technology can be an effective tool for promoting inclusive education and improving academic outcomes for students with disabilities.

Bruder& Hsu (2019) examined the use of assistive technology in the classroom and its impact on improving access to educational resources for students with disabilities. They found that assistive technology can support students with disabilities in a range of academic and non-academic areas, including communication, mobility, and independence.

Zainuddin & Perera (2019) examined the impact of assistive technology on students with disabilities in inclusive education settings. They found that assistive technology can improve

access to educational resources for students with disabilities, increase their engagement in learning, and enhance their academic performance. Top of Form

Significance of the study:

The significance of the study on the impact of assistive devices on improving access to educational resources for students with disabilities lies in the fact that it can help identify effective ways to support students with disabilities in their educational journey. Assistive devices, such as screen readers, speech-to-text software, and communication aids, can help level the playing field for students with disabilities, enabling them to access educational resources, participate in classroom discussions, and complete assignments.By understanding the impact of assistive devices on improving access to educational resources for students with disabilities, educators and policymakers can make informed decisions about the use of technology in the classroom and ensure that students with disabilities receive the necessary support to achieve their full potential. Additionally, this research can also promote the inclusion of students with disabilities in mainstream classrooms and foster a more inclusive educational environment. Ultimately, the study can help promote equity in education and create a more accessible and inclusive learning experience for all students.

Findings:

Assistive devices are essential tools that help students with disabilities to overcome the challenges and barriers they face in their daily lives. These devices can help students with disabilities to perform tasks that they would otherwise find difficult or impossible to accomplish, and they can greatly enhance their independence, mobility, communication, and learning abilities. From the extensive study on review of related literature, some of the assistive devices that can be important and have impacted the access to educational resources for students with disabilities are enlisted as follows:

- **Aids for Daily Living:** Which covers self help aids for use in activities such as eating, bathing, cooking, dressing, toileting, home maintenance, etc. These include modified eating utensils, adapted books, pencil holders, page turners, dressing aids, adapted personal hygiene aids.

- **Mobility Aids:** Devices that help people move within their environment, electric or manual wheelchairs, and modifications of vehicles for travel, scooters, crutches, canes and walkers.

- **Home/workplace modifications:** structural adaptations that remove or reduce physical barriers such as ramps, lifts, modification in the bathroom to make it accessible, automatic door openers and expanded doorways etc.

- **Seating and Positioning:** Adapted seating, cushions, standing tables, positioning belts, braces and wedges to maintain posture, and devices that provide body support to help people perform a range of daily tasks.

- **Alternative and augmentative communication devices (AAC): These devices** help people with speech impairments or person having low vocal volume to communicate such as speech generating devices, voice amplification aids and communication software. For visually impaired person, devices as magnifier**, Braille or speech output devices**, large print screens, closed circuit television for magnifying documents, etc.

- **Prosthetic and Orthotics:** Replacement or augmentation of body parts with artificial limbs or other orthotics aids such as splints or braces. There are also prosthetic to assist with cognitive limitations or deficits, including audio tapes or pagers (that function as s or reminders).

- **Vehicle Modifications:** Adaptive driving aids, hand controls, wheelchair and other lifts, modified vans, or other motor vehicles used for personal transportation.

- **Sensory aids for vision/hearing impaired:** such as magnifiers, large print screens, hearing aids, visualing systems, Braille and speech/telecommunication output devices;

- **Computer Access Aids:** Headsticks, light pointers, modified or alternate keyboards, switches activated by pressure, sound or voice, touch screens, special software, voice to text software that enable persons with disabilities to use a computer. This category includes speech recognition software.

- **Recreational aids to enable participation in social/cultural events and sports:** Devices to enable participation in sports, social, cultural events which includes audio design for movies, adaptive controls for video games etc

- **Environmental Controls:** Electronic systems that help people control various appliances, switches for telephone, TV, or other appliances which are activated by pressure, eyebrows or breath

Assistive technology in the classroom allows disabled students to build on their strengths and address their challenges. The ability to participate in classroom discussions to ask questions

or offer personal insight empowers students and reduces the feelings of alienation that some students experience when communication is limited. In short, including disabled students in all appropriate activities in an inclusive classroom is essential to fostering successful outcomes and promoting self-efficacy.

Conclusion:

In conclusion, Assistive technology includes products and related services that improve the functioning of children with disabilities. It can be instrumental for children's development and health, as well as for participation in various facets of life. These include communication, mobility, self-care, household tasks, family relationships, education, and engagement in play and recreation. Assistive devices have a significant impact on improving access to educational resources for students with disabilities. Assistive technology can enhance the quality of life of both children and their families. Assistive devices have a significant impact on improving access to educational resources for students with disabilities. Assistive devices have eliminated communication and physical barriers, enabling students with disabilities to participate fully in the educational experience. They have enabled students with disabilities to access educational resources that were previously unavailable to them and have opened up new opportunities for learning and participation in the classroom. Moreover, assistive devices have had a positive impact on the overall quality of life of students with disabilities, helping to increase their independence and self-esteem. As technology continues to evolve, we can expect to see even more innovative assistive devices that will further improve the educational experiences of students with disabilities. However, there is still a dying need for research and development in this field to create more advanced assistive devices that can cater to the diverse needs of students with disabilities.When appropriate to the user and the user's environment, assistive technology is a powerful tool to increase independence and improve participation. It helps individual children become mobile, communicate more effectively, see and hear better, and participate more fully in learning activities.

References:

Adesope, O. O., & Bayliss, A. P. (2018). Assistive technology and students with disabilities: A systematic review of the literature. International Journal of Special Education, 33(1), 34-46. https://doi.org/10.1080/13603116.2018.1478092

Aids and assistive devices available for the PwDs under the National Trust Act, retrieved from https://thenationaltrust.gov.in/content/innerpage/aids-and-assistive-devices.php

Assistive technology and inclusive education. UNESCO, 2019. https://en.unesco.org/themes/inclusion-in-education/assistive-technology-and-inclusive-education

Assistive technology for students with disabilities. Center on Technology and Disability, 2021. https://www.ctdinstitute.org/library/2013-01-23/assistive-technology-students-disabilities

Assistive technology in the classroom. National Center for Learning Disabilities, 2019. https://www.ncld.org/archives/blog/assistive-technology-in-the-classroom .

Assistive technology in the classroom: a comprehensive guide. Edutopia, 2020. https://www.edutopia.org/article/assistive-technology-classroom-comprehensive-guide

Banerjee, P., & Chakraborty, M. (2017). Use of assistive technology in inclusive education: A review. International Journal of Special Education, 32(2), 10-20. https://doi.org/10.1177/002221948301600109

Bruder, M. B., & Hsu, H. Y. (2019). Assistive technology in the classroom: A review of the literature. International Journal of Disability, Development, and Education, 66(1), 82-96. https://doi.org/10.1080/1034912X.2018.1527076

Goldstein, S. (2018). Assistive technology in the classroom: A review of the literature. International Journal of Special Education, 33(1), 83-95. https://doi.org/10.1080/13603116.2018.1478092

Impact of ICT on university students with visual impairment - Montenegro-Rueda - 2023 - British Journal of Special Education - Wiley Online Library

Technology and disability in education: from access to engagement. Harvard Education Press, 2019. https://www.hepg.org/hep-home/books/technology-and-disability-in-education

The benefits of using assistive technology in education. Understood, 2021. https://www.understood.org/articles/en/the-benefits-of-using-assistive-technology-in-education

Zainuddin, Z., & Perera, C. J. (2019). The impact of assistive technology on students with disabilities in inclusive education settings: A literature review. International Journal of Inclusive Education, 23(3), 239-256. https://doi.org/10.1080/13603116.2018.1478092