



## **Assistive Technology for Children with Disabilities**

**Dr. Poonam Singh**

Associate professor, Jagannath university  
Bahadurgarh

### **Abstract**

Help is at hand for those who struggle with a wide range of disabilities, ranging from cognitive issues to physical impairments, thanks to the availability of assistive technology, abbreviated as AT. In this essay, we will concentrate primarily on assistive technology (AT) for those who have learning difficulties (LD). Many young people benefit greatly from engaging in educational activities that make use of various forms of modern technology. Additionally, it is common for students who have learning impairments to achieve higher levels of success when they are given the opportunity to make use of their competencies (or strengths) in order to compensate for their deficiencies.

**Key words:** Assistive, Technology, Children, Disabilities etc

### **Introduction**

Children with disabilities experience different forms of exclusion, which may cut them off from health, education and social services, and limit their participation in family, community and society. This isolation can have lasting effects on future employment opportunities and participation in civic life. Supportive services and technology can enable children with disabilities to take their place in society and contribute to their family and community. Assistive technology includes products and related services that improve the functioning of people 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, engagement in play and recreation.

AT for kids with LD is defined as any device, piece of equipment or system that helps bypass, work around or compensate for an individual's specific learning deficits. Over the past decade, a number of studies have demonstrated the efficacy of AT for individuals with LD. 1 AT doesn't cure or eliminate learning difficulties, but it can help your child reach her potential because it allows her to capitalize on her strengths and bypass areas of difficulty. For example, a student who struggles with reading but who has good listening skills might benefit from listening to audiobooks. In general, AT compensates for a student's skills deficits or area(s) of disability. However, utilizing AT does not mean that a child can't also receive remedial instruction aimed at alleviating deficits (such as software designed to improve poor phonic skills). A student could use remedial reading software as well as listen to audiobooks. In fact, research has shown that AT can improve certain skill deficits (e.g., reading and spelling).

AT can increase a child's self-reliance and sense of independence. Kids who struggle in school are often overly dependent on parents, siblings, friends and teachers for help with assignments. By using AT, kids can experience success with working independently.

Review of literature

(Rahmad, 2021) studied "*Education Service Management Model in Special Needs Children at Inclusive Elementary School in Samarinda, East Kalimantan*" For the effective implementation of inclusive education, a management model tailored to the requirements of children with disabilities (ABK) should be developed. The research team in Samarinda City set out to do this to better understand how to evaluate and plan for the education of children with special needs. A placement assessment guide, a



service model, and an individualised education and training plan for children with mental retardation and mental disability are the models created.

(Agarkar, 2019) studied “*Influence of Learning Theories on Science Education*” Researchers in the field of educational psychology have created several perspectives on the learning process, the three most prominent being behaviourism, cognitivism, and constructivism. According to behaviourists, education's primary goal is the alteration of students' behaviour, which they see as a reaction to their own experiences. Cognitivists argue that students' actions flow from their thoughts, and that the primary goal of education is to alter students' mental models. The goal of education, according to constructivists, is to facilitate learners' construction of their own knowledge, and they see classroom activities as a means to this end.

(Garcia & Vargas, 2021) studied “*Management Level of Special Education Teachers (SPET) on handling Learners with Special Needs*” The purpose of this research was to provide a preliminary evaluation of the SPED initiative. It sought to measure the socioeconomic status, involvement, academic performance, and parent opinion of the SPET's handling of the LSEN. It seems from the statistics that the ages of SPED Students do not follow a normal distribution. As can be seen, there are fewer people aged 13 and 15 combined than there are aged 14. This might indicate that SPED enrolment fluctuates at random. Disabilities among SPED students, and particularly among LSEN, are varied.

(Tizard, 1978) studied “*RESEARCH IN SPECIAL EDUCATION IN INDIA*” There has been just a minuscule amount of progress in India in the study of children with special needs. The majority of experts don't consider it a top priority. Unless indigenous processes and procedures are established via study and development of materials, the efforts to transplant all western concepts and principles will not pay divided. Common to all forms of impairment is the need for an evaluation tool that can measure a person's capacity for learning, and this is an area where research is currently being conducted.

### **Kinds of assistive technology tools are available**

The term "assistive technology" has usually been applied to computer hardware and software and electronic devices. However, many AT tools are now available on the Internet. AT tools that support kids with LD include:

- **Abbreviation expanders**

Used with word processing, these software programs allow a user to create, store, and re-use abbreviations for frequently-used words or phrases. This can save the user keystrokes and ensure proper spelling of words and phrases he has coded as abbreviations.

- **Alternative keyboards**

These programmable keyboards have special overlays that customize the appearance and function of a standard keyboard. Students who have LD or have trouble typing may benefit from customization that reduces input choices, groups keys by colour/location, and adds graphics to aid comprehension.

- **Audiobooks and publications**

Recorded books allow users to listen to text and are available in a variety of formats, such as audiocassettes, CDs, and MP3 downloads. Special playback units allow users to and search and bookmark pages and chapters. Subscription services offer extensive electronic library collections.

- **Electronic math work sheets**

Electronic math worksheets are software programs that can help a user organize, align, and work through math problems on a computer screen. Numbers that appear onscreen can also be read aloud via a speech synthesizer. This may be helpful to people who have trouble aligning math problems with pencil and paper.



- **Freeform database software**

Used in conjunction with word processing or other software, this tool allows the user to create and store electronic notes by "jotting down" relevant information of any length and on any subject. He can later retrieve the information by typing any fragment of the original note.

- **Graphic organizers and outlining**

Graphic organizers and outlining programs help users who have trouble organizing and outlining information as they begin a writing project. This type of program lets a user "dump" information in an unstructured manner and later helps him organize the information into appropriate categories and order.

- **Information/data managers**

This type of tool helps a person plan, organize, store, and retrieve his calendar, task list, contact data, and other information in electronic form. Personal data managers may be portable, hand-held devices, computer software, or a combination of those tools working together by "sharing" data.

- **Optical character recognition**

This technology allows a user to scan printed material into a computer or handheld unit. The scanned text is then read aloud via a speech synthesis/screen reading system. Optical Character Recognition (OCR) is available as stand-alone units, computer software, and as portable, pocket-sized devices.

### **Environmental Modification/Assistive Technology**

Environmental Modifications (E-Mods) are internal or external modification to the residence of a person with disabilities. The modifications are designed to increase a person's independence in their own home while maintaining their health and safety. E-mod examples include wheelchair ramps, roll-in showers, lifts, handrails, automatic or manual door opener and doorbells, widened doorways, cabinet, and shelving adaptation. Assistive Technology devices allow for greater inclusion in the community with portable units designed to meet the accessibility needs of the person. Examples of these devices include wheelchairs, walkers, van lifts, and adaptive beds. EPI's role in these adaptations is to work with each person to develop a plan that meets his or her needs, find and coordinate the work of reputable contractors, and oversee the project ensuring satisfactory completion. E-Mods services for eligible individual are covered by either the Office for People with Developmental Disabilities (OPWDD) or by Department of Health Waivers. If you are interest in investigating options for home modifications or need assistive equipment, do not hesitate to contact us. Our team can help you evaluate your options and funding sources.

### **Conclusion**

Assistive devices refer to any item, piece of equipment, or product system that is used to increase, maintain or improve functioning in people with disabilities. Other environmental modifications such as grab bars, ramps, lifts, and adaptations of home interiors or exteriors are often delivered in conjunction with assistive devices. A unifying characteristic of any modification is its purpose to modify the way a child interacts with the immediate environment to maximize performance of daily life activities. There are three pivotal points of performance for which environmental modifications may be effective. The first point to the child's functional independence, defined as ability to perform essential tasks in the areas of self-care, mobility and social function . The second refers to the amount of caregiver assistance required to perform these activities. The third point focuses on the demands associated with the day-to-day caregiving to the child. Service systems that take part in provision of assistive technology need knowledge on how environmental modifications affect these aspects of functioning in daily life



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