ASSISTIVE DEVICES FOR CHILDREN WITH SPECIAL NEEDS

(UNIT:3)

ASSISTIVE DEVICES

- **ASSISSTIVE DEVICES** and technologies are those whose primary purpose is to maintain or improve an individual's functioning and independence to facilitate participation and to enhance overall well-being.
- Examples of assistive devices and technologies include wheelchairs, prostheses, hearings aids, visual aids, and specialised computer software and hardware that increase mobility, hearing, vision, or communication capacities.

Different types of assistive devices :

1. **HEARING AIDS:**

- Hearing aids, can facilitate hearing for those who are not deaf but have some level of hearing loss. For children with more severe hearing deficits, a cochlear implant may be a good option.
- Cochlear implants have a small device that is inserted beneath the skin inside the ear and an outer piece that sits behind the ear.
- It works by stimulating the auditory nerve and bypassing damaged parts in the ear that prevent hearing.
- Getting this device requires surgery, and it can take several weeks before it is ready to use and for the child to be able to hear.

2. WRITING AIDS

- Pen and pencil grips – These add-ons make pens and pencils easier to hold, creating surfaces for CP patients to grab and grip. The devices can be customized to the size and shape most beneficial for each user.
- Weighted pen or pencil – Transferrable weights can be used with regular pens and pencils, adding heft and leverage.
- Slanted writing board – Positioning is an important aspect of cerebral palsy management. Slanted writing boards keep muscles relaxed and aligned as children write and draw.

3. TYPING AIDS

- Typing aids help with communication and performance with keyboard functions. The assistive tool is strapped to the user's hand, extending a "pointer", which can be manipulated to press keyboard keys and use communication boards.
- Special keyless keyboards are also being refined for use by those with motor difficulties.

4.ELECTRONIC WORKSHEETS

- Students with learning disabilities like dyslexia can use electronic worksheets to complete their assignments.
- These worksheets help students to line up words, equations and numbers on their assignments.
- On some of the worksheets, text-to-speech or speech synthesizing technology is even available.

5.Assistive Devices Help With Routine Tasks

- ***Bath*** –
- Custom toilet seats
- Safety bars
- Bathing benches
- ***Kitchen*** –
- Weighted eating utensils
- Non-slip plates and bowls
- ***Bedroom*** –
- Safety mats
- Pull-out tables
- Positioning devices
- Dressing aids
- ***Classroom*** –
- Adaptive scissors
- Writing and typing aids
- Specialized art supplies

6.MOBILITY DEVICES

- Such devices are used for children with orthopaedic impairment. While the symptoms and complications of cerebral palsy can vary widely from one individual to the next, most children with this condition have some degree of mobility limitation.
- Many children are unable to walk, while others can walk with assistance, and some without any support at all. Aids used to enhance mobility can be quite low-tech, including the use of walkers and non-electric wheelchairs.
- There are also aids that use more technology, such as electric wheelchairs. These help children who struggle to use their arms and hands get around with just the touch of a button or joystick.
- Lifts can be used to help a child move between floors in the home, into and out of vehicles, and from sitting to standing positions.
- A power scooter is another option for mobility.

7. PHONETIC SPELLING SOFTWARE

- For many children with learning disabilities, reading and writing can be a challenge. Phonetic spelling software is designed to automatically convert the student's typing into the word that they intended to write.
- For alternative reading options, students can always check out audiobooks. With the audiobook, students can follow along in their text and overcome reading difficulties.

8. VARIABLE SPEED RECORDERS

- Everyone has a different learning style, and many students struggle with understanding auditory lectures.
- For these students, a variable speed recorder is an ideal solution. In essence, the student just has to hit record while they are in class. Afterward, the recording can be slowed down or sped up for the student to listen to it again and again. If the pitch of the recording is hard to understand, students can modify the pitch up or down to make their lectures more accessible.

9.TALKING CALCULATOR

- Students who have dyscalculia can benefit greatly from a talking calculator. The gadget makes it easier to check assignments, read numbers and perform calculations.
- While the talking calculator is a fairly simple tool, it offers an exceptional benefit for students who would otherwise struggle in math classes.
- Other than talking calculators, students can also check out text-to-voice devices. They function on the same concept of converting written words into an audible track. Students can use these devices to check their spelling or to improve their reading comprehension skills.

10. VIDEOTAPED SOCIAL SKILLS

- Autistic children and other children with learning disabilities may struggle to figure out normal social interactions.
- In the past, the most common way to learn social interactions was to practice them. Unfortunately, many children inadvertently behaved inappropriately as they tried to learn what defined "normal" social interactions.
- With videotaped social interactions, students can learn important life skills and social behavior without accidentally offending someone. In addition to interpersonal skills, these videos can work for self-help, linguistic, academic and emotional problems as well.

CONCLUSION

- Assistive devices aims to allow people with disabilities to "participate more fully in all aspects of life (home, school, and community)" and increases their opportunities for "education, social interactions, and potential for meaningful employment"
- It creates greater independence and control for disabled individuals. For example, in one study of 1,342 infants, toddlers and preschoolers, all with some kind of developmental, physical, sensory, or cognitive disability, the use of assistive technology created improvements in child development. These included improvements in "cognitive, social, communication, literacy, motor, adaptive, and increases in engagement in learning activities.
- Both family and professional caregivers benefit from assistive devices. Through its use, the time that a family member or friend would need to care for a patient significantly decreases.
- However, studies show that care time for a professional caregiver increases when assistive device is used ,their work load is significantly easier as the assistive technology frees them of having to perform certain tasks.
- There are several platforms that use machine learning to identify the appropriate assistive device to suggest to patients, making assistive devices more accessible.