

## UNIT – IV: EDUCATIONAL PROGRAMME AND OTHER SUPPORTIVE THERAPEUTIC INTERVENTION STRATEGIES

Functional and educational programmes based on Medical & Health Care, Therapeutics, and use of Technology for Persons with Physical disability; Intellectual disability; Mental behaviour; Chronic Neurological Conditions; Blood disorder; Multiple Disabilities

### UNIT – IV

#### **EDUCATIONAL PROGRAMMES AND OTHER SUPPORTIVE THERAPEUTIC INTERVENTION STRATEGIES**

Functional and educational programs based on Medical & Health Care,

The rights of Mental ill persons under the Mental Health Act, 1987 are stated below:

1. A right to be admitted, treated and taken care of in Psychiatric hospital or Psychiatric nursing home or convalescent home established or maintained by the government or any other person for the treatment and care of mentally ill persons (other than general hospitals or nursing homes of the government).
2. Even mentally ill prisoners and minors have a right of treatment in Psychiatric hospitals or Psychiatric nursing homes of the government.
3. Under the mental health Act, 1987 mentally ill persons are entitled to not only be admitted, treated and taken care of in psychiatric hospital or Psychiatric nursing Home or convalescent home established or maintained by the government or any other person for the treatment and care of mentally ill persons (other than general hospitals or nursing homes of the government) but also live with dignity.

4. The police have an obligation to take into protective custody a wandering or neglected mentally ill person and inform his relative and have to produce such person before the local magistrate for grant of reception orders.

5. Minors who are under the age of 16 years, those persons who are addicted to alcohol or other drugs which lead to behavioural changes and those convicted of any offence are entitled to admission, treatment and care in separate Psychiatric hospitals or nursing homes established or maintained by the government.

6. Mentally ill persons have the right to have regulated, directed and co-ordinated mental health services from the government which through the Central Authority and the state authorities set up under the Act have the responsibility of such regulation and issue of licenses for establishing and maintaining Psychiatric hospitals and nursing homes.

7. Treatment at government hospitals and nursing homes mentioned above can be had either as in patient or as outpatients.

8. Mentally ill persons can seek voluntary admission in such hospitals or nursing homes and minors can seek admission through their guardians. Relatives of mentally ill persons on behalf of the latter can seek for admission. Applications can also be made to the local magistrate for grant of reception orders.

9. The police have an obligation to take into protective custody a wandering or neglected mentally ill person and inform his relative and have to produce such person before the local magistrate for grant of reception orders.

10. Mentally ill persons have the right to be discharged when cured and entitled to leave in accordance with the provisions in the Act.

11. Where mentally ill persons own properties including land which they cannot themselves manage, the District Court upon application has

to protect and secure the management of such properties by the entrusting the same to a Court of Wards, by appointing guardians of such mentally ill persons or appointment of managers of such property.

12. That costs of maintenance of mentally ill persons detained as inpatient in any government concerned unless such costs have been agreed to be borne by the relative or other person on behalf of the mentally ill person and no provision for such maintenance has been made by the order of the District Court. Such costs can also be borne out of the estate of the mentally ill persons.

13. Mentally ill persons undergoing treatment shall not be subjected to any indignity (whether physical or mental) or cruelty. Nor can such mentally ill person be used for purposes of research except for his diagnosis or treatment or with his consent.

14. Mentally ill persons who are, entitled to any pay, pension, gratuity or any allowance from the government (such as government servants who become mentally ill during their tenure) are not to be denied such payments. The person who is incharge of such mentally person or his dependents will receive such payments after the magistrate has certified the same.

15. A mentally ill person shall be entitled to the services of a legal practitioner by order of the Magistrate of District Court if he has no means to engage a legal practitioner or his circumstances so warrant in respect of proceedings under the Act.

The National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999 :

1. The Central Government has the obligation to set up in accordance with this Act and for the purpose of the benefit of the disabled the National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and multiple Disability at New Delhi.

2. The National Trust Created by the Central Government has to ensure that the objects for which it has been set up as enshrined in Section 10th of this act have to be fulfilled.

3. It is the obligation of the Board of Trustees of the National Trust to make arrangement for adequate standards of living of any beneficiaries named in any be request received by it and to provide financial assistant to registered organization for carrying out any approved programme for the benefit of the disabled.

4. Disabled persons have the right to be placed under guardian appointed by the local Level Committees in accordance with the provisions of the Act. The guardians so appointed will have the obligation to be responsible for the person and property of their disabled wards and be accountable for the same.

5. A disabled person has the right to have his guardian removed where he is abusing or neglecting the former or is misappropriating or neglecting the property of the disabled person.

6. Where the Board of trustees is unable to perform or has persistently made default in the performance of duties imposed on it, a registered organization for the disabled can complain to the Central Government to have the Board of Trustees superseded and/or reconstituted.

7. The provisions of this Act as to its accountability, monitoring finance, accounts and audit, shall bind the National Trust.

### **Therapeutics**

There are a variety of therapies that many families choose to incorporate into their child's daily or weekly living. Some of these therapies can be obtained at their school, whereas others are provided privately, Often agencies that are ventured with organizations can provide free or low cost therapy for your child. New laws are now

allowing medical insurance to cover many therapies.

In OT, occupations refer to the everyday activities that people do as individuals, in families and with communities to occupy time and bring meaning and purpose to life. The primary goal of OT is to enable people to participate in the activities of everyday life.

Occupational therapy interventions focus on adapting the environment, modifying the task, teaching the skill, and educating the person in order to increase participation in and performance of daily activities, particularly those that are meaningful to the person.

Occupational therapists often work closely with professionals in physical therapy, speech therapy, nursing, social work, and the community. Children who need OT

According to the AOTA, children with the following medical problems benefit from OT:

- ✓ birth injuries or birth defects
- ✓ sensory processing disorders
- ✓ traumatic injuries (brain or spinal cord)
- ✓ learning problems
- ✓ autism/pervasive developmental disorders
- ✓ juvenile rheumatoid arthritis
- ✓ mental health or behavioral problems
- ✓ broken bones or other orthopedic injuries
- ✓ traumatic amputations
- ✓ cancer
- ✓ severe hand injuries
- ✓ multiple sclerosis,
- ✓ cerebral palsy
- ✓ other chronic illnesses

Objectives of Occupational Therapy

Through the years, three general objectives of occupational therapy have evolved:

Diversion:

The primary objective is to divert or distract attention away from the disease or disorder toward more healthful ideas and positive thinking i.e. toward useful tasks or occupations such as painting, weaving, pottery, sewing, or woodworking and amusements which included playing games, listening to music, playing music, watching or performing plays, participating in playful exercises and sports, as well as doing a variety of arts and crafts.

**Emotional Expression:**

Emotional expression, also called creative expression, became important to occupational therapy as through the use of the creative arts and crafts patients can express attitudes, feelings, and ideation, express hostility, dependency, and infantile oral and anal needs. Develop better self-concepts, improve personal identities, and build more healthy egos. Creative arts and crafts provide opportunities of reality testing as well.

During the 1950s, the concept of activities of daily living (ADLs) was added to the objective of skill building. Activities of daily living, also called self-care, included such tasks as dressing, grooming, walking, and eating.

In the 1970s, skill building began to be described in three or four areas called self-care or daily living skills, work or productivity, play-leisure or recreation and three to five components called physical, motor, sensory, sensorimotor, cognitive, intrapersonal, psychological, interpersonal, social, psychosocial, or cultural.

Gradually, the term ‘performance’ became a key concept. These objectives provide the framework for more specific and more individualized goals and objectives.

### **Objectives of OT for Children/ Persons with Special Needs**

The objectives of occupational therapy for children/persons with special needs are to:

- ✓ help children work on fine motor skills so they can grasp and release toys and develop good handwriting skills

- ✓ address hand-eye coordination to improve child's play and school skills (hitting a target,
- ✓ teach children and adults with physical disabilities the coordination skills needed to feed themselves, use a computer, or increase the speed and legibility of their handwriting
- ✓ evaluate a child's need for specialized equipment, such as wheelchairs, splints, bathing equipment, dressing devices, or communication aids
- ✓ work with children and adults who have sensory and attentional issues to improve focus and social skills.

### **Speech and Language Therapy**

Some language intervention programs target specific language skills (e.g., phonology, semantics, syntax, morphology), while others are more holistic in nature, targeting a broader range of language and communication skills (e.g., expressive language interventions and receptive language interventions). Language intervention approaches can include the following.

**Clinician-Oriented**—the clinician selects the goals and the treatment setting and determines the stimulation to be used and the type and schedule of reinforcement for accurate responses. These approaches utilize operant procedures and are often used to teach language form (e.g., syntax and morphology).

**Child-Oriented**—the clinician utilizes indirect language stimulation techniques and follows the child's lead in more natural, every day settings and activities in an effort to stimulate language growth. These approaches are typically used with young children but can be modified for use with older children.

### **Narrative Interventions**

Narrative interventions focus on improving a child's story-telling ability, including the ability to provide context for the listener; use narrative structures (story grammars) to organize events; and utilize microstructure (e.g., syntactic complexity, temporal and causal conjunctions, coordinating conjunctions, elaborated phrases, and

adverbs) to enhance the clarity of the narrative. Narratives can provide a naturalistic means of targeting specific language difficulties.

### **Peer-Mediated/Implemented/Involvement**

Peer-mediated or implemented treatment approaches incorporate peers as communication partners for children with language disorders in an effort to provide effective role models. Peers are taught strategies to facilitate play and social interactions; interventions are commonly carried out in inclusive settings where play with typically developing peers naturally occurs.

### **Directive interventions**

Directive interventions tend to include the following characteristics: Providing massed blocks of trials having the professional control the antecedents (stimuli) and consequences (reinforcers) using consequences such as verbal praise or tokens that are not related to the child's current activities.

In directive interventions, the professional providing the intervention controls the antecedents and consequences presented to the child. Directive approaches use specific techniques such as modeling and prompting to elicit targeted language structures from the child. An example of modeling is having the professional name an object shown to the child and then prompting the child to name the object. Prompting involves the professional presenting a verbal command or question, or some nonverbal cue, to the child to elicit a desired verbal response. Directive interventions frequently use blocks of discrete trials or drills in a controlled environment.

### **Naturalistic interventions**

Naturalistic approaches commonly include the following characteristics: Naturalistic interventions use specific techniques that create opportunities for the child to use targeted language structures. This approach utilizes aspects of adult-child interaction that promote language acquisition. Deciding which techniques to use for an individual child



requires the professional to draw upon knowledge about normal language acquisition and to be cognizant of the needs of the particular child. A critical aspect of naturalistic interventions is the professional's ability to read, interpret, and respond appropriately to the child's cues.

Naturalistic and enhanced methods involve the professional arranging materials in the environment and respond appropriately to the child's cues.

### **Receptive skills**

Receptive language is the ability to understand words and language. It involves gaining information and meaning from routine visual information within the environment, sounds and words concepts such as size, shape, colors and time, grammar and written information. Some children who have difficulty in understanding oral language get visual information from the environment or from gestures.

Receptive language is important in order to communicate successfully. Children who have difficulties may find it challenging to follow instructions at home or within the educational setting and may not respond appropriately to questions and requests. As most activities require a good understanding of language, it may also make it difficult for a child to access the curriculum or engage in the activities and academic tasks required for their year level of school.

### **Expressive skills**

Expressive language is the use of words, sentences, gestures and writing to convey meaning and messages to others. Expressive language skills include being able to label objects in the environment, describe actions and events, put words together in sentences, use grammar correctly retell a story, answer questions and write short story.

Expressive language is important because it enables children to be able to express their wants and needs, thoughts and ideas, argue a point of view, develop their use of language in writing and engage in successful interactions with others. How can we involve the child fully

in conversation, without putting too much pressure on them? Here are a few ideas: -

### **Physiotherapy**

According to the definition adopted by WHO, physiotherapy is "the art and science of treatment using therapeutic exercise and physical agents such as heat, cold, light, water, massage, electricity, etc. In addition, physiotherapy includes the execution of manual and electrical tests to determine the level, joint movement and the range of vital capacity, as well as diagnostic aids for monitoring recovery. Physiotherapy aims to develop, maintain and restore the maximum degree of functional capacity in people with somatic, psychosomatic and organic disorders, or in those whose health or quality of life has been negatively affected.

**Specific conditions and physiotherapy management – cerebral palsy, spina bifida, muscular dystrophy and poliomyelitis**

### **Cerebral Palsy**

**Cerebral palsy (CP)** is a group of permanent movement disorders that appear in early childhood. Signs and symptoms vary among people and over time. Often, symptoms include poor coordination, stiff muscles, weak muscles, and tremors. There may be problems with sensation, vision, hearing, swallowing, and speaking.

There is no one developmental play for treating people with cerebral palsy with physical therapy. Each individual case is handled uniquely starting off with a diagnosis. Therapists will conduct a multitude of tests to assess the person's severity of Cerebral Palsy. Examinations will test and examine the following:

- ✓ Flexibility
- ✓ Gait and motion training
- ✓ Reflexes to major body parts
- ✓ Neurological Development

- ✓ Physical Capability
- ✓ Balance
- ✓ Flexibility
- ✓ Joint and tendon flexibility
- ✓ Sensory Development
- ✓ Breathing and respiration functioning

### **Spinabifida**

Spina Bifida is a congenital disease and is more common among children. The condition starts when the fetus' meninges of the central nerve is not completely closed during pregnancy. The condition become serious when the meninges protruded from the lining.

The effects of spina bifida will vary according to the type, location and amount of nerve damage in the spinal cord.

- ✓ Partial or complete paralysis of the parts of the body below the spinal level affected, which impacts on development of gross motor skills such as sitting, standing and walking
- ✓ Altered sensation
- ✓ Altered bladder and bowel control
- ✓ Hydrocephalus(excessive fluid in the brain)
- ✓ Secondary effects of altered muscle control impact on Musculo skeletal system (can lead to dislocated joints, scoliosis etc)

The effects of spina bifida can impact enormously on a child's function and physiotherapy should commence as soon as possible in order to maximize a child's potential and quality of life. Treatment will vary according to the severity of the condition. Our specialist physiotherapists can provide treatment which may include:

- ✓ Maximizing independence in functional activities such as standing, transferring and walking
- ✓ Provision of mobility aids and equipment to increase independence
- ✓ Exercises to maintain or improve muscle
- ✓ Anticipating, preventing and minimizing secondary effects such as development of contractures

- ✓ Positioning and postural advice
- ✓ Teaching wheel chair skills to maximize independence
- ✓ Provision of appropriate orthotics
- ✓ Exercises to improve balance and coordination to prevent risk of falls

## **Muscular dystrophy**

Muscular dystrophy (MD) is a group of genetic diseases caused by a change or mutation in one of the genes located on the chromosomes (DNA) in human cells. It is not caused by an injury or harmful activity.

Physical therapists help children with muscular dystrophy maintain function by managing complications of the disorder's progression, such as muscle weakness and contractures. Each child with muscular dystrophy has unique needs based on age, the type of dystrophy, and the progression of symptoms. Physical therapists work with children and their families, as well as with other health care professionals, to develop individualized treatment plans to help children reach their full potential.

The physical therapist is an important partner in health care and fitness for anyone diagnosed with muscular dystrophy. Physical therapists identify muscle weakness, and work with each child to keep muscles as flexible and strong as possible, help reduce or prevent contractures and deformities, and encourage movement and mobility for optimal function throughout all the stages of life. Each treatment plan is designed to meet the child's needs using a family-centered approach to care. If assistive devices are needed, the physical therapist may collaborate with other professionals to determine the best walking aids, braces, or wheel chair for each child.

## **Use of Technology**

The International Classification of Functioning, Disability and Health (ICF) defines assistive products and technology as any product, instrument, equipment or technology adapted or specially designed for

improving the functioning of a person with a disability. The International Organization for Standardization (ISO) defines assistive products more broadly as any product, especially produced or generally available, that is used by or for persons with disability: for participation; to protect, support, train, measure or substitute for body functions/structures and activities; or to prevent impairments, activity limitations or participation restrictions.

Assistive Technology(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. Mobility aids, such as wheelchairs, scooters, walkers, canes, crutches, prosthetic devices, and orthotic devices.

Hearing aids to help people hear or hear more clearly.

Cognitive aids, including computer or electrical assistive devices, to help people with memory, attention, or other challenges in their thinking skills.

Computer software and hardware, such as voice recognition programs, screen readers, and screen enlargement applications, to help people with mobility and sensory impairments use computers and mobile devices.

Tools such as automatic page turners, book holders, and adapted pencil grips to help learners with disabilities participate in educational activities

Closed captioning to allow people with hearing problems to watch movies, television programs, and other digital media.

Physical modifications in the built environment, including ramps, grab bars, and wider doorways to enable access to buildings, businesses, and workplaces.

Lightweight, high-performance mobility devices that enable persons with disabilities to play sports and be physically active.

Adaptive switches and utensils to allow those with limited motor skills to eat, play games, and accomplish other activities.

Devices and features of devices to help perform tasks such as cooking, dressing, and grooming; specialized handles and grips, devices that extend reach, and lights on telephones and doorbells are a few examples.

Mobility

Wheelchairs

Canes

Crutches

## Vision

Walkers or walking frames

Walking stick

Tricycles

White cane

Prosthetics

Clubfoot brace

€ Eyeglasses,  
magnifier,  
magnifying  
software for  
computer

- Communication cards
    - GPs app for walking poles
  - Hearing
    - Hearing aids
    - Hearing loops
  - ⊟ Positioning
    - ⊟ Cushions
    - ⊟ Splints
  - ⊟ Communication
    - ⊟ Communication cards
    - ⊟ Communication boards that use eye movements
    - ⊟ Picture based instructions
    - ⊟ Communication electronic devices ( see video below)
  - ⊟ Everyday life
    - ⊟ GPS-based navigation device.
    - ⊟ Timers: manual or automatic reminder
    - ⊟ Smartphones with adapted task lists
  - ⊟ Learning
    - ⊟ Adapted toys and games
    - ⊟ Braille systems for reading and writing
    - ⊟ Talking book players

## **Use of Technology for Persons with Physical disability**

### **Persons with Hearing Impairment**

During the initial years, age-appropriate educational programmes were not made available to children with hearing impairment in the country. The advancement of science and technology developments in early identification and intervention in the knowledge of child development change the attitude. This resulted in the development and implementation of age-appropriate educational programs to meet the



educational needs of every child with a hearing impairment.

✓ Presently, Parent Infant Programme (PIP), a pre-school program, primary, secondary and college education are available either in integrated/segregated set-ups. The recent trend is toward inclusion‘ whereby accepting the disabled child in the mainstream as a child first and adapting the environment to suit their special educational needs.

✓ During earlier times, the classroom teaching methods were more of manual nature. However, with the establishment of the fact that the deaf is neither or nor dumb, the speech and development of spoken language in children with hearing impairment started receiving attention.

✓ Research in aids and appliances have contributed greatly to the change in classroom practices. The recent auditory verbal therapy and auditory approach to improve the verbal communication skills of children with hearing impairment is possible today due to the extremely superior kind of hearing aids.

✓ Traditional methods like chalk and talk method have been replaced by project methods, individualized education, microteaching, etc. the use of Information Communication Technology (ICT) in the education of children with hearing impairment has brought in more and more illustrious teaching-learning materials in the classroom.

✓ From the stage were the children with hearing impairment used their hands cupped behind the ears for better reception of sounds to the present use of programmable hearing aids, the amplification devices have

come a long way. The speaking tubes, speaking horns, and heavy cumbersome hearing aids gave way to much sophisticated light weight, cosmetically appealing and superior quality hearing aids.

✓ The science and technology has also made inroads in the field of devices for early detection of hearing impairment. Babies as young as a week old also can now be screened for a hearing loss.

✓ The surgical implant of the cochlea is another progressive step to help children with hearing impairment to improve their perception of speech and communication skills.

✓ The classroom amplification devices have been of great assistance to the teachers of children with hearing impairment. The currently available loop induction system and frequency modulated hearing aids have drastically eased out the mobility of teachers and students and are making the educational process an enjoyable experience.

✓ Education of children with hearing impairment is influenced by the quality and quantity of teachers. Establishment of Rehabilitation Council of India (RCI) in 1986 was another land mark in the history of manpower development. RCI was passed in 1992 with the objective of recognizing the educational qualification of professionals and regulating the standards of the institutions offering teacher training programs.

✓ In India, different educational programs for children with hearing impairment are designed and practiced in formal as well as non-formal set-ups. Some of these programs are segregated in nature and some are integrated and are confined to urban areas. Intensive efforts are going on to extend these programs in rural areas to achieve the goal of universalization of education.

The technology supporting the hearing impaired is part of the mainstream. Science and Technology through Aids and appliances bring children with hearing impairment from the state of isolation to inclusion.

**Use of Technology for Persons with Intellectual disability / Learning Disabilities (LD).**

Assistive technology (AT) is available to help individuals with many types of disabilities, from cognitive problems to physical impairment. This article will focus specifically on AT for individuals with learning disabilities (LD).

The use of technology to enhance learning is an effective approach for many children. Additionally, students with LD often experience greater success when they are allowed to use their abilities (strengths) to work around their disabilities (challenges). AT tools combine the best of both of these practices.

### **Assistive Technology for LD**

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. 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.

AT can address many types of learning difficulties. A student who has difficulty writing can compose a school report by dictating it and having it converted to text by special software. A child who struggles with math can use a hand-held calculator to keep score while playing a game with a friend. And a teenager with dyslexia may benefit from AT that will read aloud his employer's online training manual. There are AT tools to help students who struggle with:

#### **Listening**

Certain assistive technology (AT) tools can help people who have difficulty processing and remembering spoken language. Such devices can be used in various settings (e.g., a class lecture, or a meeting with multiple speakers).

#### **Math -**

Assistive technology (AT) tools for math are designed to help people who struggle with computing, organizing, aligning, and copying

math problems down on paper. With the help of visual and/or audio support, users can better set up and calculate basic math problems.

## **Organization and memory**

Assistive technology (AT) tools can help a person plan, organize, and keep track of his calendar, schedule, task list, contact information, and miscellaneous notes. These tools allow him to manage, store, and retrieve such information with the help of special software and hand-held devices.

There is a wide range of assistive technology (AT) tools available to help individuals who struggle with reading. While each type of tool works a little differently, all of these tools help by presenting text as speech. These tools help facilitate decoding, reading fluency, and comprehension.

### **Writing**

There is a wide range of assistive technology (AT) tools available to help students who struggle with writing. Some of these tools help students circumvent the actual physical task of writing, while others facilitate proper spelling, punctuation, grammar, word usage, and organization.

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 color/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.

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.

### **Personal FM listening systems**

A personal FM listening system transmits a speaker's voice directly to the user's ear. This may help the listener focus on what the speaker is saying. The unit consists of a wireless transmitter (with microphone) worn by the speaker and a receiver (with earphone) worn by the listener.

### **Portable word processors**

A portable word processor is a lightweight device that is easy to transport (e.g., from classroom to home). It can be helpful to kids who may have trouble writing by hand and prefer to use a keyboard. Word processing allows the user to edit and correct his written work more efficiently than doing so by hand.

### **Use of Technology for Persons with Chronic Neurological Conditions;**

Digital health technology, including terms such as eHealth, mobile health (mHealth), and digital tools, refers to the utilization, or application, of internet and smart-based technology to the promotion of health or health care. Innovative technologies such as wearable devices, smartphone apps, internet-based self-help platforms, and health record databases have the ability to record, store, or present health-related data. This information can then be used to enhance the understanding, management, or monitoring of medical conditions by patients, carers, or health care professionals.

A range of digital technologies have already been applied to several individual neurological conditions such as epilepsy , MS , headache and migraine , Parkinson disease , and acquired brain injury . There appears use and interest, at least in the short-term, and some evidence, with regard to web-based platforms, of a potential beneficial influence on mental health and quality of life

## **Use of Technology for Persons with Blood disorder**

### **a.Chronic Neurological Conditions**

#### **✓ Multiple Sclerosis**

#### **✓ Parkinson's Disease**

✓ Mobility aids- Tools that can help enhance safety, mobility, and balance, such as a rollator walker or cane.

✓ Bathing & Grooming aids- Tools that help simplify self-care tasks, such as an electric toothbrush or razor, or shower chair.

✓ Dressing aids- Tools that make getting dressed easier including magnetic fasteners and a shoehorn.

✓ Meal Preparation and Feeding aids- Tools that can make dining easier, including adaptive utensils.

✓ Home safety aids- Tools such as personal medical alert systems and smart home technology devices that can ease health and home management. Devices include voice-activated lights and speakers.

✓ Speech and Communication aids- Tools that can help you speak, including voice amplifiers, communication applications, and alphabet and picture boards.

✓ Memory and Visual aids- Such as reminder signage, calendar, alarms and electronic notifications.

✓ Recreation and Leisure aids- Tools that can help you continue doing the activities you enjoy. Examples include audiobooks, cardholders and adaptive gaming.

