



Republic of Rwanda  
Ministry of Education



REB RWANDA BASIC  
EDUCATION BOARD

# TEACHER TRAINING MANUAL ON SPECIAL NEEDS AND INCLUSIVE EDUCATION



2<sup>nd</sup> EDITION

September 2025

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# FOREWORD

Inclusive education remains a priority of Rwanda's national education agenda, and its advancement is deeply rooted in sustained REB's commitment. The revision of the teacher training manual was undertaken to reflect this commitment, aligning with the ongoing Education Sector Strategic Plan 2024-2029, which prioritises equity, accessibility and quality learning for all. By strengthening inclusive teaching practices and equipping teachers with the tools they need to support learners with diverse needs, this manual reflects the government's commitment to building an education system that leaves no one behind.

This important milestone would not have been possible without the financial support of the Scottish Government, relayed through the technical support of Chance for Childhood. Their investment has enabled the development of a more responsive and comprehensive inclusive education teacher training manual, ensuring that teachers across Rwanda are better prepared to meet the evolving needs of learners with disabilities. This collaboration means a lot in driving systemic change and promoting inclusive education as a global priority.

The revised teacher training manual (2<sup>nd</sup> Edition) introduces a series of transformative updates that directly address critical gaps identified in the 2018 version. While core competencies such as Braille proficiency, bilingual deaf education pedagogy, and mobility and orientation remain essential, the new manual goes further by incorporating practical methods aligned with Rwanda's competency-based curriculum". It provides teachers with concrete strategies for fostering inclusive school environments, emphasising inclusive language, disability awareness and peer support systems to combat stigma and promote the active participation of all learners. In addition, the revision incorporates leading global approaches, including Universal Design for Learning (UDL) and the effective use of assistive technologies, to ensure that teachers are not only informed about these innovations but also trained to implement them in meaningful ways. This change will enable to resolve context- sensitive challenges that hinder the education of learners with disabilities.

We take this opportunity to express our sincere appreciation to all institutions and stakeholders who contributed to the successful revision of this manual. Special thanks go to MINEDUC, Rwanda Basic Education Board (REB) team, the National Examination and School Inspection Authority (NESA), NCPD, University of Rwanda - School of Inclusive Education, TTCs, districts, INGO and civil society organizations working in the field of inclusive education. Their expertise, insights, and commitment have been instrumental in developing a manual that is both contextually relevant and globally informed.

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## List of acronyms

<b>ADHD</b>	Attention Deficit Hyperactivity Disorder
<b>ADLs</b>	Activities of Daily Living
<b>ARV</b>	Anti-RetroViral
<b>CBC</b>	Competence Based Curriculum
<b>CFS</b>	Child-Friendly School
<b>CRC</b>	Convention on the Rights of the Child
<b>CRPD</b>	Convention on the Rights of Persons with Disabilities
<b>EBD</b>	Emotional and Behavioural Disorder
<b>ESSP</b>	Education Sector Strategic Plan
<b>HI</b>	Humanity & Inclusion
<b>ICT</b>	Information and Communication Technology
<b>IE</b>	Inclusive Education
<b>IEP</b>	Individual Education Plan
<b>ILFE</b>	Inclusive-Learning Friendly Environment
<b>ILFS</b>	Inclusive-Learning Friendly School
<b>IQ</b>	Intelligence Quotient
<b>JAWS</b>	Job Access With Speech
<b>O&amp;M</b>	Orientation and Mobility
<b>MD</b>	Muscular Dystrophy
<b>MIGEPROF</b>	Ministry of Gender and Family Promotion
<b>MINEDUC</b>	Ministry of Education
<b>NCDA</b>	National Child Development Agency
<b>NCPD</b>	National Council of Persons with Disabilities
<b>NESA</b>	National Examination and School Inspection Authority
<b>NST</b>	National Strategy for Transformation
<b>NUDOR</b>	National Union of Disability Organisations in Rwanda
<b>REB</b>	Rwanda Basic Education Board
<b>RNUD</b>	Rwanda National Union of the Deaf
<b>ROPDB</b>	Rwanda Organisation of Persons with Deaf-Blindness
<b>RUB</b>	Rwanda Union of the Blind
<b>SBM</b>	School Based Mentor
<b>SDG</b>	Sustainable Development Goals
<b>SED</b>	Serious Emotional Disturbance
<b>SEN</b>	Special Educational Needs
<b>SNE</b>	Special Needs Education
<b>SpLD</b>	Specific Learning Difficulties
<b>SWOT</b>	Strengths, Weaknesses, Opportunities and Threats
<b>TDD</b>	Telecommunications Device for the Deaf
<b>TTC</b>	Teacher Training College
<b>UDL</b>	Universal Design for Learning
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization

## List of symbols



Learning objectives



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## GENERAL INTRODUCTION

The Government of Rwanda is fully committed to promoting inclusive education. It believes that Education for All cannot be achieved if some members of the Rwandan community, including those with special educational needs (SEN) and vulnerability, are excluded from the education system. In order for all children to progress and enjoy all the benefits of education within an inclusive setting, they need the support of all skilled actors involved in the provision of education. With appropriate support from teachers, school leaders, parents, local authorities, civil society and development partners, it is expected that learners with SEN will be enabled to participate fully in the teaching and learning process. It is within this context that the ESSP 2024/2029 takes it as a priority and the competence-based curriculum recognizes inclusive education as a cross cutting issue.

The revision of the 2018 IE teacher training Manual reflects a necessary response to the dynamic shifts in both global and national educational landscapes. Over the past seven years, Rwanda has seen significant policy evolution and institutional restructuring, particularly with the roles of REB and NESA in shaping inclusive education frameworks. To remain relevant and impactful, the teacher training must now incorporate contemporary global practices such as UDL and assistive technologies that empower diverse learners. Furthermore, the revised teacher training manual ensures strategic alignment with Rwanda's Education Sector Strategic Plan (2024-2029), the Special Needs and Inclusive Education Policy, the National Competence Based Curriculum and the NST2. It also reinforces Rwanda's commitment to international obligations, including Article 27 of the UN Convention on the Rights of Persons with Disabilities (UNCRPD) and Sustainable Development Goal 4 (SDG4), which advocates for inclusive, equitable, and quality education for all. This revision is not merely a technical update but it is a reaffirmation of Rwanda's dedication to inclusive excellence in inclusive education.

The New Comprehensive Teacher Training Manual is structured into five chapters as follows: Chapter I is on Basics of Inclusive Education with emphasis on key concepts on inclusive education, legal framework on inclusive education, principles of inclusive education and inclusive and learning friendly school; Chapter II is on Disability awareness and addressing stigma associated with disability, Chapter III is on Teaching Learners with Special Educational Needs with special emphasis on teaching learners with physical disabilities; teaching learners with visual difficulties; teaching learners with hearing difficulties, teaching learners with Deaf-Blindness; teaching learners with intellectual disabilities, teaching learners with specific learning difficulties; teaching learners with communication difficulties; teaching gifted, genius and talented learners; teaching learners with emotional and behavioural disorders; and teaching learners with autism and hyperactivity; Chapter IV is on Accessible Teaching and Learning Materials with emphasis on educational resources and assistive technology to promote learning in an inclusive setting; Chapter V is on Inclusive Education Pedagogy in the Classroom with emphasis on lesson planning, lesson delivery, lesson assessment, development of IEP and application of the bilingual deaf education pedagogy.

The revised teacher training manual (2nd Edition) is structured into five comprehensive chapters, each carefully divided into thematic units. Each unit is designed to guide trainers through a clear learning pathway, beginning with an introduction and defined learning objectives. It outlines the estimated duration, recommended teaching approaches and methods, and specifies the necessary teaching and learning resources. To promote engagement and contextual understanding, each unit includes introductory activities, core content, and concludes with an end-of-unit assessment to evaluate the acquired knowledge. While the manual provides a solid framework, detailed guidance on teaching techniques and facilitation strategies is developed further in the accompanying trainer's guide, providing technical tips of delivery.

## CHAPTER 1: BASICS OF INCLUSIVE EDUCATION

# UNIT 1

## KEY CONCEPTS ON INCLUSIVE EDUCATION

This unit introduces educators to key concepts and terms related to inclusive and special needs education theory and practices. It encourages teachers to engage in discussion and reflection on these terms as they apply them in their teaching practice with learners who have special educational needs (SEN).



### Learning objectives

By the end of this unit, trainees should be able to:

- Explain basic concepts and terms with regard to inclusive education.
- Use concepts appropriately in their practices.



### Introductory Activity

#### Understanding inclusive education

Think about a time when you felt left out maybe in class, at home, or with friends. How did that make you feel? Now imagine how a learner who faces challenges like difficulty seeing, hearing, moving, or understanding lessons feels in such a situation. Responding to this, share how you would make sure every learner in your classroom feels included, supported, and respected.



### Content Summary

**Assistive devices:** These are equipment and materials used to facilitate/ aid the functionality of a person with disability. Examples: hearing devices, lenses, Perkins Braille devices, talking calculators, audio and video systems, white cane, wheel chairs, tricycles and special seats, adopted software like JAWS, interpreting technology, etc.

**Child-Friendly School (CFS):** An educational setting characterized as “inclusive”, healthy, and protective for all children, irrespective of differences in ability, gender, social status, background, or other factors. It is based on the principle that every child should learn in an environment that is physically safe, emotionally secure and psychologically enabling. The approach aims at developing a learning environment in which children are motivated and able to learn. In Rwanda today, a CFS is characterized by quality education indicators including health and sanitation promotion, safe and protective learning environment, school and

community partnership, effective school management, gender sensitivity, inclusiveness, effective teaching and learning. These indicators apply to all levels of education

**Support services/intervention:** These are special services offered by professionals in support of mainstream teachers of learners with disabilities and related educational needs; such as speech and language therapy, occupational therapy, sign language interpretation, counselling.

**Universal Design for Learning (UDL):** This is an internationally-recognized approach to inclusive teaching and learning. It refers to a set of principles and practices that allows all learners equal opportunities in the same educational setting. UDL provides a design for creating instructional goals, methods, materials, and assessments that work for everyone, and not a single, one-size-fits-all solution, rather, flexible approaches that can be customized and adjusted for individual needs. The UDL Guidelines are a framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn. The UDL Guidelines are organized according to three main principles that address representation, expression, and engagement, for each of which, “Checkpoints” are specified and highlighted.

### Key terms and concepts

**Inclusive education** is a holistic approach that embraces diversity by ensuring all learners, regardless of disability or impairment, have equitable access to quality education within **mainstream schools**. **Disabilities and impairments** often lead to **Special Educational Needs (SEN)**, which inclusive education seeks to address through **individualized teaching strategies** and support from **itinerant teachers** and **multidisciplinary team**. Unlike **integrated education**, which places learners with SEN in regular classrooms without adapting the environment, **inclusive education modifies teaching methods and resources** such as **resource rooms** and provides **habilitation or rehabilitation services** in an effort to meet each learner's unique needs. While **special schools** offer tailored environments for learners with more complex needs, inclusive education aims to minimize segregation by fostering supportive, adaptive learning spaces within mainstream settings, guided by the principles of **Special Needs Education**.

**N.B:** For further clarification and deeper understanding, additional concepts and terminologies are available in the glossary (**Annex 1**).



#### End-of-Unit Assessment

Write the definitions of the key terms and concepts in your notebook.

Post your notebook on the wall so that others can read and review them.

Explain your definitions to your peers and explore the relationships between the key terms and concepts.

# UNIT 2

## LEGAL FRAMEWORK ON INCLUSIVE EDUCATION

This unit introduces trainees to international, regional and national policies and guidelines related to inclusive and special needs education. Those legal documents include UNESCO Salamanca Statement and Framework for Action (1994) on inclusive education, Dakar Framework for Action (2000) ensuring that all children have access to and complete free and compulsory basic education by 2015, UN CRPD of 2008 (Art. 24), SDGS (Goal 4), Constitution of Republic of Rwanda, Vision 2050, EDPRS2, NST1, ESSP 2024-2029.



### Learning objectives

By the end of this unit, trainees should be to:

- Explain global, regional and national policies/documents guiding inclusive and special education practices;
- Explain matters/rules with regard to inclusive and special education policy and practice;
- Assess whether schools implement policies with regard to inclusive education.



### Introductory Activity

#### Exploring inclusive education policies

Inclusive education is governed by different global and national legal instruments. Are you aware of some of them? This activity will help you understand how Rwanda's efforts connect with international commitments to promote inclusive education.



### Content Summary

The following paragraphs summarize some international, regional and national commitments for the promotion of special needs and inclusive education.

## 2.1. International and regional commitments

2.1.1. *Universal Declaration of Human Rights* (1948) ensures the right to free and compulsory elementary education for all children. The declaration emphasizes that all persons with disabilities have a right to education no matter how severely disabled they are.

2.1.2. *UN Convention on the Rights of the Child (1989)* ensures the right for all children to receive education without discrimination on any grounds. The convention asserts that “all rights are indivisible and interrelated” meaning that providing segregated education could violate the children’s right to non-discrimination as much as it aims at fulfilling their right to education.

2.1.3. *World Declaration for Education for All (1990)*: First agreement on target of ‘Education for All’. The Jomtien declaration addresses the challenges of educational disparities and calls for attention to be paid on vulnerable groups to discrimination and exclusion with a specific mention of persons with disabilities.

2.1.4. *Standard Rules on the Equalization of Opportunities for Persons with Disability (1993)*: The UN Standard Rules on the Equalization of Opportunities for Persons with Disabilities Rule 6 not only affirms the equal rights of all children, youth and adults with disabilities to education but also states that education should be provided in “an integrated school settings” and in the “general school settings”.

2.1.5. *UNESCO Salamanca Statement and Framework for Action (1994)*: ‘Schools should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions. This should include learners with disabilities and gifted, street and working children, children from remote or nomadic populations, children from linguistic, ethnic, religious or cultural minorities and children from other disadvantaged or marginalised areas or groups.’

2.1.6. *Dakar Framework for Action (2000)*: Ensuring that all children have access to and complete free and compulsory primary education by 2015. Focus on marginalized and girls.

2.1.7. *The UN Convention on the Rights of Persons with Disabilities (2006) as ratified in 2008* promotes the right of persons with disabilities to inclusive education (Article 24). It adopts a broad categorization of persons with disabilities and reaffirms that all persons with all types of disabilities must enjoy all human rights and fundamental freedoms.

2.1.8. *Sustainable Development Goals*: Goal 4 ensures inclusive and equitable quality education and promotes lifelong learning opportunities for all. Specific targets are (i) by 2030, the world will eliminate all disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous people and children in vulnerable situations; (ii) build and upgrade education facilities that are child, disability and gender sensitive and provide safe, nonviolent, inclusive and effective learning environments for all.

2.1.9. *Quality assurance guidance on disability and other special education needs in EAC higher education* observes art 120 (c) of the “Treaty for the establishment of EAC” that all partner states cooperate in the field of welfare with respect to adoption of a common approach towards the disadvantaged and marginalized groups, including person with disabilities, through rehabilitation and provision of education and training.

2.1.10 *The Marrakesh Treaty*: adopted in 2013 by the World Intellectual Property Organization (WIPO), was designed to improve access to published works for people who are visually impaired. It facilitates the creation of accessible formats such as braille, audio, or large print by allowing exceptions to copyright laws. The treaty aims to end exclusion in inclusive education and enhance participation of learners who are visually impaired.

## 2.2. National commitments

2.2.1. *The constitution of the Republic of Rwanda of 2003 as amended in 2015* (Art.51) states that the State has duty to establish measures facilitating education of persons with disabilities.

2.2.2. *Law n° 01/2007 of 20/01/2007* relating to protection of persons with disabilities in general states that a person with disabilities has the right to appropriate education in respect of the nature of his or her disability.

2.2.3. *The National Strategy for Transformation 2 (NST2)*: is Rwanda's five-year development programme for 2025–2029, building on the achievements of NST1 and aligning with the country's Vision 2050 goals. It focuses on five key priorities: job creation, export promotion, quality education, reducing stunting and malnutrition, and enhancing public service delivery. The strategy aims to elevate Rwanda to upper middle-income status by 2035 and high-income status by 2050, with ambitious targets such as creating 1.25 million jobs, doubling export revenues, and boosting private investment and national savings.

2.2.4. *MINEDUC Policy and Strategic Plan on Special Needs and Inclusive Education* (2018): The policy provides the overarching framework for the development and delivery of educational services for learners with a range of SEN in Rwandan education. It pledges eradication of all intrinsically and/or extrinsically motivated barriers met by learners with special educational needs at school.

2.2.5. *Rwanda's Education Sector Strategic Plan (ESSP) 2024–2029*: is a national road map aimed at delivering inclusive, high-quality education that equips citizens with the skills and 15 values needed for rapid socioeconomic transformation. Aligned with Vision 2050 and the National Strategy for Transformation 2, the plan focuses on expanding access, especially in pre-primary and adult literacy, improving learning outcomes, reducing dropout and repetition rates, and enhancing the relevance of education to labour market needs. It emphasizes equity, quality, and effective governance to ensure every Rwandan child receives a world-class education.

2.2.6. *Competence based Curriculum framework-2015* has placed inclusive education among the crosscutting issues that needs to be addressed by all subject teachers.

As conclusion, Rwandan education policy provision draws from international and regional frameworks to address the following issues:

1. All children have a fundamental right to education
2. Every child has unique characteristics, interests, abilities and learning needs;

3. Education systems should be designed and educational programs implemented to meet these diversities among children;
4. Learners with special needs must have access to mainstream schools where curriculum are flexible enough to meet their needs

*2.2.7 Rwanda's National Policy for Persons with Disabilities (2021):* is a comprehensive framework aimed at promoting the rights, inclusion, and empowerment of persons with disabilities across all sectors of society. It aligns with international conventions such as the UN Convention on the Rights of Persons with Disabilities and emphasizes equal access to education, healthcare, employment, and social services. The policy seeks to eliminate stigma and discrimination, enhance accessibility, and ensure that persons with disabilities actively participate in national development. It reflects Rwanda's commitment to building an inclusive and equitable society for all.



### End-of-Unit Assessment

Reflect on your school, and based on the above documents, discuss the following:

1. Is your school inclusive or integrated? Can you substantiate your answer by indicating how some of the learners are affected and give reasons?"
2. Do your school practices fit into the national, regional and international policy frameworks that regard the education of learners with disabilities and other special educational needs?
3. If not, what is missing? What are the challenges/barriers? Identify possible solutions for each challenge/barrier and suggest key stakeholder/individual to address this.

# UNIT 3

## PRINCIPLES OF INCLUSIVE EDUCATION

This unit introduces educators to the main principles that guide inclusive education practices within the education system.



### Learning objectives

By the end of this unit, the trainees should be able to:

- Explain key principles of inclusive education in education system;
- Assess the implementation of IE principles in education system;
- Demonstrate how these principles, guide the quality of inclusive teaching and learning;
- Value principles of IE in school community and beyond.



### Introductory Activity

#### Understanding principles of inclusive education

Think about inclusive education. Probably, three words or phrases come to your mind. Let us identify together one principle that you believe is most important for creating an inclusive classroom (e.g., respect, equity, participation, flexibility).



### Content Summary

The fundamental principle of the inclusive school is that all children should learn together, wherever possible, regardless of any difficulties or differences they may have. Inclusive schools must recognize and respond to the diverse needs of their learners, accommodating different styles and rates of learning and ensuring quality education to all through appropriate curricula, organizational arrangements, teaching strategies, resource use and partnerships with their communities. There should be a continuum of support and services to match the continuum of special needs encountered in every school (Salamanca, 1994).

While the focus of most agency work is on the compulsory education sector, these principles will apply to all sectors and phases of lifelong learning and to formal and non-formal education. The learner-focused principles will apply equally to learners with and without disabilities, as inclusion is concerned with the quality of education of all learners

The next sections thus, outline the main pedagogical principles adapted from the documents mentioned in Unit 2 above.

### 3.1 Responding to learners' needs

Learners have different ways of accessing information and making it meaningful. Therefore, the education system is expected to respond appropriately to learners' learning differences:

- In planning their learning taking personal factors into account;
- In the provision of support to overcome barriers to learning that does not stigmatize them or separate them from their peers;
- In assessment – choosing different ways of showing what they know, understand and can do, being involved in discussions about assessment information and how it can support future learning;
- In curriculum–having as a relevant, meaningful, personalized outcomes.

### 3.2 Active participation of learners

All learners are entitled to be active participants in the life of the school and community and feel valued for the individual contribution that they make.

Learners should be listened to for any additional support (e.g. assistive aids or alternative learning approaches) needed to help them participate in the full range of activities and experiences offered. Therefore, education system should ensure that learners:

- Have a sense of belonging and feel secured in the school environment;
- Have opportunities for collaboration and co-operative learning, with flexible peer groups to develop social and communication skills;
- Have their achievements recognized and celebrated;
- Take a full part in extracurricular and out-of-school activities;
- Take responsibility for their own learning and an active role in the learning process, maintaining high expectations and increasing independence in learning; and recognize their responsibilities to others in the school and community.

### 3.3 Positive teacher's attitudes

All teachers should have positive attitudes towards all learners and they will to work collaboratively with colleagues to respond to their educational needs. Therefore, teachers should:

- Take responsibility for all learners and show understanding of the fundamental needs that they all have in common e.g. to feel safe, sense of belonging to the school community, to enjoy their time in school and achieve learning outcomes;
- Value and show commitment to meeting a broad range of outcomes (including 19 emotional health and well-being, social skills) and maintain high expectations for all learners;

- Recognize when learners need support and arrange this sensitively together with the learner, without using potentially limiting labels;
- Have knowledge of a range of resources (including ICT tools) and the skills to use them effectively in the classroom;
- Have a positive attitude to innovation and be prepared to continue their personal and professional development;
- Collaborate with and support teachers to reflect on practice and build ‘team’ knowledge and skills in order to help learners (for example in the development of individual support, classroom strategies or transition plans); and
- Communicate effectively with learners, parents and colleagues from all service providers to benefit learners.

### 3.4 Effective teacher skills

All teachers should develop appropriate pedagogical skills to enable them meet individual learner’s needs. For example, teachers should be able to:

- Assess learning outcomes by using a range of approaches which allow learners to show what they know, understand and are able to do in a variety of ways;
- Use feedback from the SEN assessment to identify barriers (physical, attitudinal, organizational) to learning and plan strategies to support the learners;
- Provide a range of learning opportunities in line with individual learner ability;
- Ensure curriculum differentiation to suit the learners ‘differences and competences; and
- Collaborate with peer educators to develop individual educational plan and monitor its implementation.

### 3.5 Visionary school leadership

- School leaders should value diversity among staff and learners, encourage collegiality and support innovation. Throughout the whole school, inclusive values should be evident in all school rules, regulations, development plans and practices. Therefore, school leaders should:
- Establish a positive ethos and a learning culture by making their vision and inclusive values and beliefs explicit in all aspects of school life;
- Ensure that inclusion and learner well-being are central in school improvement plans and evident in all practices;
- Organize school in ways that avoid labeling or categorizing learners, e.g. flexible, mixed groupings for different activities;
- Encourage and empower staff to develop their capacity and competence through different approaches in order to meet a diversity of learners ‘needs;
- Support staff to reflect on their practices in relation with inclusiveness in order to become autonomous lifelong learners;
- Manage resources effectively and ensure that they reflect and respect the diversity of learners within the school;

- Use school funds efficiently to transform the school in an inclusive environment accessible to all learners;
- Develop effective monitoring of school improvement plan to ensure the achievement of learning outcomes for all learners;
- Manage multidisciplinary staff to take joint responsibility in facilitating access to the curriculum and extracurricular activities for all learners;
- Communicate effectively with the local community, interdisciplinary support services and to ensure a holistic and multidisciplinary approach to meeting broader needs and enhance learning;
- Adapt UDL in all school planning strategies.

### 3.6. Coherent interdisciplinary services

Every school should have access to the support of interdisciplinary community services. Children and young people will not be successful in their learning if their basic health, social and emotional needs are not met. This may require support for families and communities and will need services such as health and social services to collaborate and ensure a holistic approach.

Interdisciplinary services should:

- Demonstrate good working relationships and effective communication across and between different sectors/services and schools in the community. They should enable information to be shared and appropriate and timely support provided to address additional needs (such as special educational needs assessment/diagnosis results, therapies for medical needs, mental health support etc.);
- Work closely with parents and learners to strengthen links between the family, school and the interdisciplinary team; and
- Work with schools to involve all stakeholders, including local special schools/settings in their support networks and seek innovative ways to share expertise.

As a conclusion, all the above principles are interconnected, complementary and focused on the support services and/or approaches for learners with disabilities and other special educational needs at both family, community and school levels.



#### End-of-Unit Assessment

Take a case of any four mainstream schools of your choice in your neighborhood. Evaluate the application of the above-mentioned six principles. Outline what is present, missing and develop strategies to alleviate the situation in the schools.

# UNIT 4

## INCLUSIVE AND LEARNING FRIENDLY SCHOOL

This unit introduces educators to inclusive and learning friendly school concept and practices.



### Learning objectives

By the end of this unit, the trainees should be able to:

- Explain an inclusive, learning-friendly environment, and its benefits to individuals and the society at large;
- Promote peer collaboration in determining ways in which their school/environment can be inclusive and learning-friendly;
- Conduct a SWOT (strength, weakness, opportunities and threats) analysis in order to analyze the current status of their schools;
- Brainstorm about how to transform schools into more inclusive and child-friendly.



### Introductory Activity

#### Understanding aspects of an inclusive and learning friendly school

Imagine working in a school where every learner feels safe, valued, respected, and supported. Think about the physical environment, the attitudes of teachers and learners, and the kinds of activities that happen there. Share your ideas and thoughts. This activity will help us begin to understand how schools can create inclusive spaces where every learner feels included.

### Classroom A

Forty children are sitting on wooden benches behind desks with their exercise books open and their pens in their hands. The teacher is copying a story on the chalkboard from the P 3 textbook, making sure that she writes exactly as it is written in the textbook. The boys, who are sitting on the right side of the room, copy what the teacher has written into their exercise books. The girls, who are sitting on the left side of the room, wait for the teacher to move so that they can see what she has written and copy it into their exercise books. As s/he writes, the teacher asks, "Are you copying the story that I am writing?" Everyone answers, "Yes, teacher."

### Classroom B

Two groups of children are sitting on the floor in two circles. Both groups contain girls and boys. The P3 teacher is teaching shapes to the children. In one group, the children are talking

about circles. The teacher has shown them some common objects that s/he had asked the children to bring from home. The children handle the objects and then work together to make a list of other objects that are circular in shape. In the other group, some of the children are holding rolled up newspapers that look like long sticks. The teacher calls a number, and the child with that number places her stick on the floor in the centre to begin forming a square. One child with hearing difficulties adds her stick to form a triangle and smiles at the teacher. The teacher smiles back at her and sign saying “very good,” making sure that the child can see her lips as she speaks. A school-based mentor (SBM), who has volunteered to be a classroom helper for a week, pats her on the arm, and then turns to assist a learner who is confused about where to place his stick in order to form a new shape.

#### **Questions:**

- Which one of these classrooms is inclusive and learning-friendly?
- What are characteristics that make the classroom inclusive and learning-friendly?

Share with participants the content of the table on ordinary versus inclusive, learning friendly classroom.

#### **Activity 3**

- Brainstorm on the question “what do you think are the important elements of an inclusive, learning-friendly school?”
- On a large writing paper, get trainees to draw a large circle in the middle and write in the circle “ILFS.” On the outside of this circle, they write down one or two characteristics that they feel are most important for a learning-friendly school.
- Compare their answers with the characteristics of an inclusive, learning-friendly school.
- Are any characteristics missing? Ask:
  - Which characteristics do our schools or classrooms have, and which do we need to work more towards?”
  - How can we improve our schools or classrooms to transform it as a friendly learning environment?”

#### **Activity 4 :**

How do you think learners, teachers, parents, and communities benefit from inclusive, learning-friendly environments?”

Compare your ideas by reading aloud the section on the benefits of inclusive, learning-friendly environments.



#### **Content Summary**

Many schools attempt to become child-friendly, aiming to enhance each child’s participation and learning experience across multiple dimensions, rather than concentrating on the subject matter and examinations. Children come to school to learn, but as teachers, we learn to

teach more effectively so that all learners learn, even from learners. A “learning-friendly” environment is thus both “learner-friendly” and “teacher-friendly.” It stresses the importance of learners and teachers learning together as a learning community. It places children at the centre of learning and encourages their active participation in schooling.

Changing from an ordinary school or classroom to one that is inclusive and learning-friendly is a process, not an event. It does not happen overnight. It takes time and teamwork. Yet, it can give many benefits for teachers, learners, their families, and their communities.

#### **4. Inclusive, Learning-Friendly Environment (ILFE)**

An inclusive, learning-friendly environment is one where every learner regardless of ability, background, or learning style feels valued, supported, and empowered to participate fully in the learning process. This unit is going to explore the characteristics an Inclusive, Learning-Friendly Environment (ILFE), its benefits, how to support the inclusion of children with disabilities, and the use of assessment tools to help schools evaluate how inclusive and learning-friendly they are

### **4.1. Characteristics of ILFE**

#### **Introductory activity**

**Activity:** In small groups, draw an inclusive friendly school. Each group posts the chart on the wall. Organize a gallery walk where each group explains to the rest the characteristics of their school (what makes their school inclusive)?



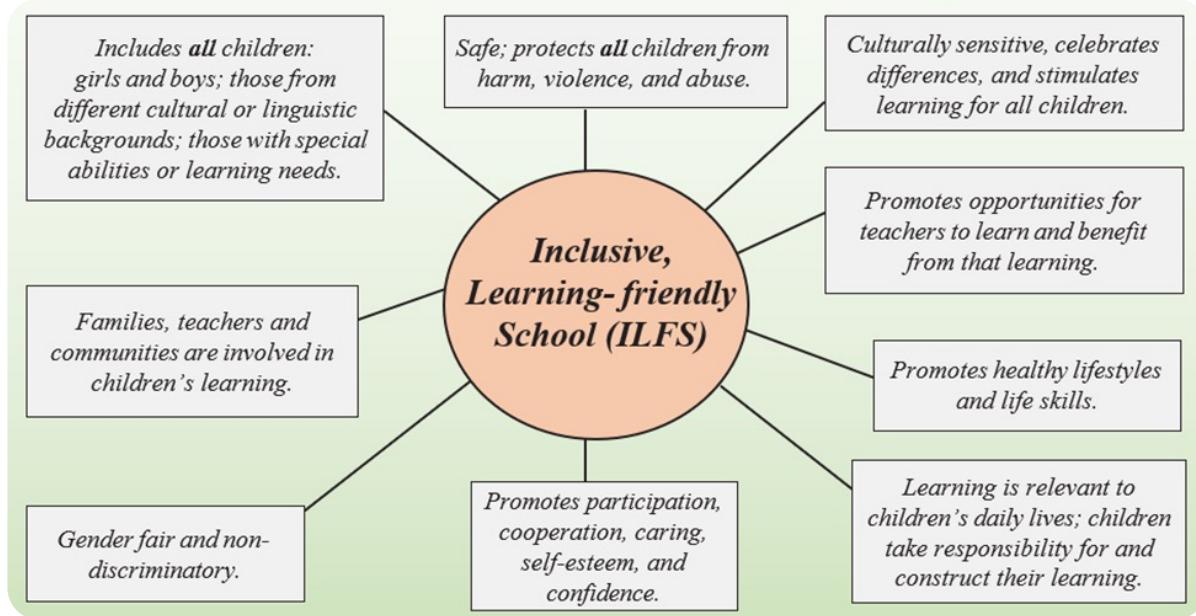
#### **Content Summary**

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## Mainstream schools v.s inclusive, learning-friendly classrooms

Parameters/ variables	Typical (traditional) mainstream classrooms	Inclusive, learning-friendly classrooms
<b>Relationships</b>	<b>Distant:</b> the teacher addresses learners with her back towards them	Friendly and warm. The teacher sits next to and smiles at the learner with a hearing impairment. The SBM-helper praises this learner and assists other learners.
<b>Who is in the classroom?</b>	The teacher as well as learners with quite similar abilities	The teacher, learners with a wide range of backgrounds and abilities, and others such the SBM.
<b>Sitting Arrangement</b>	Identical sitting arrangements in every classroom (all learners seated at desks in rows; girls on one side of the room, boys on the other)	Different sitting arrangements, such as girls and boys sitting together on the floor in two circles or sitting together at tables
<b>Learning materials</b>	Textbook, exercise book, chalkboard for teacher	Variety of materials for all subjects such as math materials made from newspapers, or posters and puppets for language class
<b>Resources</b>	The teacher is interacting with learners without using any additional teaching materials.	The teacher plans a day in advance for the class. She involves the children in bringing learning aids to the class, and these aids do not cost anything.
<b>Teaching strategies</b>	Teacher-centered	Learner-centered
<b>Evaluation</b>	Standard written examinations	Assessment that corresponds to individual abilities and SEN; observations; samples of learner's work over time such as portfolios

## Characteristics of an inclusive school



Source: EENET: *Becoming an Inclusive Learning Friendly Environment (ILFE)*, 2015

## 4.2. Benefit of ILFE

### Activity: Scenario

In a rural primary school located in Nyagatare District, teachers were faced with the challenge of meeting the diverse needs of their learners. The school enrolled children with different backgrounds and abilities, including Jean, a boy with a hearing impairment; Aisha, a refugee girl from Burundi struggling with the Kinyarwanda language; Eric, a learner with a physical disability who used crutches; and Diane, a girl from a low-income family who often missed school due to domestic responsibilities. These learners, like many others, were at risk of being left behind academically and socially due to the lack of inclusive practices. In 2023, the school partnered with the Rwanda Basic Education Board and a local NGO to transform into an ILFE. Teachers received training in inclusive pedagogy, learning how to differentiate instruction, use visual and interactive methods, and apply basic sign language. Peer learning groups were formed to support struggling students, allowing Aisha to improve her Kinyarwanda skills and Jean to participate in class through gesture and peer assistance. Infrastructure adjustments, such as the construction of ramps, enabled Eric to access classrooms and latrines more easily, while flexibility in homework and regular home visits helped Diane attend school more regularly. As a result, student engagement and performance improved significantly. Teachers observed that learners were more confident, cooperative, and eager to participate in class activities. This scenario illustrates the critical importance of inclusive learning environments in Rwanda: they ensure equitable access to quality education, promote active participation and belonging for all learners, and contribute to national efforts toward inclusive and sustainable development in education.

## Questions:

1. How did the implementation of inclusive teaching strategies contribute to the participation and academic progress of learners with diverse needs at Umucyo Primary School?
2. What specific changes in the school environment helped reduce barriers for learners like Jean, Aisha, Eric, and Diane?
3. From the above case study, brainstorm the benefits of ILFE.



## Content Summary

### Benefits of ILFE

An ILFE benefits diverse groups by enhancing learners' confidence, creativity, communication, and appreciation of diversity while equipping them with practical skills for life.

- **Benefits for teachers**

Teachers in an ILFE gain new strategies and knowledge to address diverse learning needs, recognizing that success extends beyond examinations to valuing different ways learners acquire and demonstrate understanding.

- **Benefits for parents**

In an ILFE, parents become actively involved in their children's education, feel valued as equal partners, and adopt supportive strategies from teachers to enhance learning at home.

- **Benefits for communities**

An ILFE strengthens community involvement and pride, fosters supportive school community collaboration, and contributes to reducing social challenges through shared responsibility for learners' success.

## 4.3. Learning from Experience: Including Children with Disabilities

Inclusive education helps create more human, compassionate, and honest learners. In classrooms where children with disabilities are included, other students do not question their peers' behavior or appearance. Instead, they applaud their success, support them during learning, and treat them as equals in all classroom or extra curricula activities. However, in schools where there are no children with disabilities, some learners may display negative attitudes such as laughing at, ignoring, bullying or staring at those with disabilities. Interestingly, learners from inclusive classrooms often defend their peers with disabilities, showing how experience leads to empathy and solidarity.

Parental attitudes also change through experience. Initially, some parents express discomfort, saying things like: "Why should my child sit next to a disabled learner?" or "They will disturb my child." But within a month or two, after seeing their children accept and support peers with

disabilities, many parents become actively supportive. They may help children with disabilities dress, pack, or walk home.

Parents even ask teachers to explain the type of disability their child's classmate has, seeking understanding instead of rejection. Eventually, both students and parents adjust well, proving that inclusion works through learning, exposure, and empathy. In conclusion Inclusive education transforms attitudes. Children and parents may begin with fear or resistance, but through experience and support, they develop acceptance, empathy, and active inclusion.

## 4.4. Is your school already an ILFE?

Many schools in Rwanda may be developing an inclusive friendly environment benefiting teachers, children, parents, and overall community members. Thereafter, you will know what further steps your school still needs to take and become fully inclusive and learning-friendly. The checklist annexed to this document will help you assess your school (please check on the annex 2).

### Assessment tools for ILFE

Many schools in Rwanda may be developing an inclusive friendly environment benefiting teachers, children, parents, and overall community members. The checklist below will help to assess ILFE in schools. Place a checkmark beside each of the items that your school is already doing, be as honest as possible.

#### School policies and administrative support

Your school:

- Has a mission and/or vision statements and policies about inclusive, learning- friendly education, including rules and regulations against discrimination;
- Has a master list of all children in the community, whether enrolled or not, and has individual records of why children have not enrolled;
- Conducts regular campaigns to encourage parents to enroll their children, ones that emphasize that all children should be enrolled and are welcome;
- Has copies of documents or resources at national or district levels that address inclusive education for children with diverse backgrounds and abilities;
- Has links with the community, is responsive to the needs of the community, and provides opportunities for exchanging ideas with the community to bring about positive changes in inclusive practices.
- Has plans and programs to conduct individualized assessment for learners with special educational needs to identify their strengths and limitations; then to develop their individual education plans (IEP).

## School environment

Your school:

- has facilities that meet the needs of all learners, such as separate toilets for girls, and ramps (not stairs) for learners with physical disabilities, ran adequately equipped resource room to facilitate learning of a wide range of learners with special educational needs
- has a welcoming, healthy, and clean environment
- has a steady supply of clean, safe drinking water?
- has multidisciplinary team comprising for example counselors, special needs education teachers, rehabilitation workers and bilingual teachers who can identify and help with the learners' individual learning needs
- has processes and procedures in place that help all school community members (leaders, teachers, supporting staff, learners) and parents to work together to identify and assist learners with special educational needs
- focuses on teamwork and learner-centered approaches
- has an established collaboration with neighboring health centers in assessment and rehabilitation of learners with special needs?

## Teachers' skills, knowledge and attitudes

Teachers:

- are knowledgeable on inclusive education and ILFE;
- believe that all children – girls, poor or wealthy children, language and ethnic minority children, as well as those with disabilities – can learn;
- are involved in finding school-age children who are not in school to see that they get an education;
- know about diseases that cause physical, emotional, and learning disabilities; and can help unhealthy learners to get proper care;
- have high expectations for all learners and encourage them to complete school;
- are aware of resources that are available to assist learners with more individual learning needs;
- adapt curriculum, lessons, and school activities to the needs of learners with diverse backgrounds and abilities;
- use different methods in their teaching that help all learners to learn;
- can assess learners' learning in ways that are appropriate to the learners' abilities and needs;
- are reflective and open to learning, adapting, experimenting and transforming; are able to work as a team with other teachers, learners, parents and community members, as well as education leaders;

## Teacher professional development

### Teachers:

- Attend workshops and advanced professional training on a regular basis;
- Give presentations to other teachers, parents, and community on developing an ILFE classroom;
- Receive ongoing support for developing teaching and learning materials related to ILFE;
- Have a work area or lounge where they can prepare lesson materials and share ideas;
- Participate in study visit to “model” ILFE schools;

### Learners

- All school-age children in the community attend school regularly
- All learners have textbooks and learning materials that match their learning needs
- All learners receive regular assessment information to help them monitor their progress.
- Learners with diverse backgrounds and abilities have equal opportunities to learn, express themselves in the classroom and participate in all school activities.
- All learners are sensitive to special educational needs and able to provide appropriate support

### Academic content and assessment

- The curriculum accommodates different teaching methods, e.g. discussions and role play, to meet different learning rates and styles, particularly for learners with special learning needs.
- The content of the curriculum relates to the everyday experience of all learners in the school whatever their background or ability.
- Teachers use locally available resources to help learners learn.
- Learners with learning difficulties have opportunities to review lessons or to have additional tutoring.
- Curriculum and learning materials are in the languages (e.g. Rwandan sign language) learners use in and out of school.
- Curriculum promotes attitudes such as respect, tolerance, and knowledge about one's own and others' cultural backgrounds.
- Teachers have various assessment tools to measure learners' knowledge, skills, and attitudes (including learner self-assessment), rather than only depending on examination scores.
- Learners with physical disabilities have opportunities for physical play and development.
- All learners have opportunities to read, write, and learn in their own language when they first enter school and, if possible, continuing thereafter.

## Community

- Parents and community groups know about ILFE and are able to help the school develop ILFE qualities. The community helps the school reach out to all children who have been excluded from school.



### End-of-Unit Assessment

#### What is the situation in your school?

As a teacher, what type of classroom do you work in?

- What changes can you introduce to make your classroom more inclusive and learning-friendly?
- How can you make the topics more interesting for learners?
- How can you arrange the classroom so that all of the children learn together?
- Who can help you to create an ILFE (for example, the school leader, other teachers, my learners, parents, and community leaders)?

Here is a short list of some of the barriers to becoming an ILFE that may affect some schools. Identify some of the ways to overcome each obstacle in school.

- Change takes energy, openness, and willingness. If teachers have many domestic responsibilities or many non-teaching administrative duties at school, such as attending frequent meetings, they may feel that they don't have the time or the will to change.
- Teachers do not understand what an ILFE is, or think that they do not have resources needed to develop ILFE.
- Parents and even teachers may not understand the benefits of ILFE and are concerned that including all kinds of children in the school will affect other learner's education negatively.

## **CHAPTER 2:**

### **UNDERSTANDING AND ADDRESSING STIGMA ASSOCIATED WITH DISABILITY**

# UNIT 1

## PROMOTING A POSITIVE AND INCLUSIVE CULTURE IN RWANDAN MAINSTREAM SCHOOLS



### Session objectives

1. Define a positive and inclusive school culture in mainstream schools.
2. Identify practical strategies for inclusion (inclusive games, peer support, community engagement).
3. Develop action points to foster safe, respectful, and supportive environments for all learners, including children with disabilities.
4. Recognise the roles of teachers, school leaders, parents, and communities in sustaining inclusiveness.



### Introductory Activity

#### 1. What is a positive and inclusive school culture?

- **School culture** = shared values, norms, beliefs, practices, and relationships shaping daily school life.
- **Inclusive culture** = all learners feel respected, valued, and supported, regardless of ability, background, gender, or disability.
- **Rwandan context**: diversity is a strength; children with disabilities learn alongside peers in dignity and mutual respect.
- **Equity over equality**: provide what each learner needs to succeed.
- Linked to national values:
  - Ubumwe (Unity)
  - Ubupfura (Integrity)
  - Ubwitange (Selflessness)

#### 2. Practical approaches to inclusion

Approach	Examples	Benefits
Inclusive games	Seated volleyball, storytelling circles, cooperative role-play	Builds teamwork, participation for all
Peer support	Peer buddies, study partners	Encourages empathy, leadership

<b>Community engagement</b>	Parents adapt materials, community education volunteers (CEVs) assist learners	Strengthens school-community ties
<b>Extracurricular clubs</b>	Debate, art, music	Showcases talents of all learners

### 3. Activities that can promote inclusion among children with and without disabilities

The activities can include the following:

- Create anti-bullying and anti-discrimination practices
- Positive discipline instead of corporal punishment.
- Child protection committees to monitor safety.
- Safe, quiet spaces for emotional support.
- Student IE clubs and peer mentorship.
- Regular accessibility, inclusion and safety checks.
- Align with Rwanda's child rights policies (eg. NCDA and MIGEPROF's), SDGs, and inclusive education frameworks.

### 4. Roles in sustaining inclusiveness

#### Teachers

- Adapt teaching to diverse needs.
- Model respect and positive relationships.
- Identify and respond to learning needs.

#### School leaders

- Set inclusive policies and vision.
- Allow for children's initiatives fostering inclusion.
- Lead sensitisation efforts.

#### Faith Based Organizations and other stakeholders

- Contribute to awareness raising on inclusive education and the educational rights of children with disabilities among their congregations
- Encourage children with disabilities and SEN to participate in religious ministries, clubs, religious education programmes and events
- Support learners with disabilities to access education.

#### Parents/guardians

- Support learning at home.
- Advocate for children's rights.
- Share insights on supporting learners with disabilities.



### End-of-Unit Assessment

- When have children with disabilities felt truly included in a class group? What made that possible?
- What barriers to inclusion exist in your school? How can they be addressed?

### 5. Your personal action plan

Mention two actions you will take to promote inclusion in their school:

1. \_\_\_\_\_

2. \_\_\_\_\_

# UNIT 2

## INCLUSIVE DISABILITY TERMINOLOGY

This section is about the language to be used when naming different types of disabilities.



### Objectives

By the end of this lesson, trainees will be able to:

- Define inclusive disability terminology and explain why it matters.
- Identify outdated terminologies and suggest inclusive terminology.
- Apply inclusive language in real-life scenarios (spoken and written).
- Demonstrate awareness of the social model of disability in communication.



### Content Summary

#### a) Introduction to inclusive language

Language demonstrates the way people think, feel, and act toward others, influencing attitudes and perceptions. Using inclusive terminology is essential because it not only reflects respect for individuals but also actively promotes dignity, equality, and fairness. By choosing correct words to use, we avoid stereotypes or bias, thus building inclusive society where everyone feels valued and included.

#### b) Key principles

- **Use person-first language:** “Person with a disability” not “disabled person”.
- **Avoid labels:** Replace “the disabled” with “people with disabilities.”
- **Focus on ability, not limitation:** “a person using a wheelchair” instead of “wheelchair-user.”
- **Respect self-identification:** Ask individuals how they prefer to be described.
- **Avoid negative terminology** (eg. Sufferer, victim).

#### c) Examples of Inclusive versus Non-Inclusive Terms

Non-inclusive term	Inclusive language
Handicapped	Person with a disability
Crippled	Person with mobility impairment
Deaf and dumb	Person who is deaf
Suffers from epilepsy	Person with epilepsy
Wheelchair user	Person using a wheelchair

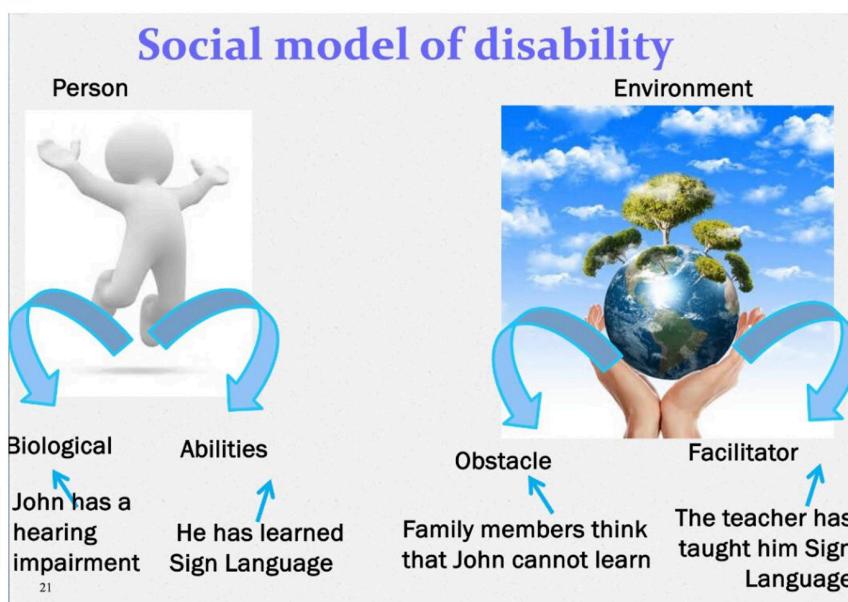
Disabled person	A person with disability
Hearing impaired person	A person with hearing impairment
Visually impaired person	A person with visual impairment

## Kinyarwanda terminology

In accordance with the NCPD Guidelines issued on 18th May 2015, the following considerations shall apply:

Nº	Inappropriate (Ntibavuga)	Appropriate (Inyito iboneye)
1	Ikimuga, uwamugaye, ubana n'ubumuga, ugendana n'ubumuqa	Umuntu ufile Ubumuga
2	Ikirema, Ikimuga, Karema, Kajorite, Gicumba, Utera isekuru, Kaguru, Sekaguru, Muguruwakenya, Terigeri, Kagurumoya, Kaboko, Mukonomova, Rukuruzi	Umuntu ufile Ubumuga bw'ingingo
3	Impumyi, Ruhuma, Maso, Gashaza, Miryezi	Umuntu ufile ubumuga bwo kutabona
4	Igipfamatwi, Ikiragi, Nyamuragi, Ibibu, Ikiduma, Igihuri, Bihurihuri	Umuntu ufile ubumuga bwo kutumva no kutavuga cyanqwa bumwe muri bwo kutumva cyangwa kutavuga
5	Igicucu, igihoni, ikijibwe, ikirimarima, ikiburaburyo, ikiburabwenge, indindagire, ikigoryi, igihwene, ikimara, zezenge, icyontazi, inka, inkaputu	Umuntu ufile ubumuga bwo mu mutwe
6	Kanyonjo, gatosho, gatuza	Umuntu ufile Ubumuga bw'Ionyojo
7	Nyamweru, umwera, ibishwamweru, umuzungu wapfubve, ikivejuru	Umuntu ufile ubumuga bw'uruju
8	Igikuri, gikuri, gasongo, nzovu, zakayo, gasyukuri, kilograma	Umuntu ufile ubugufi bukabije.

## d) Link to the social model of disability



The social model of disability shifts the focus from an individual's impairment to the barriers that society creates, whether physical, attitudinal, or infrastructural. It recognises that disability is not simply the result of a medical condition, but is produced when environments, services, and cultural attitudes fail to accommodate diverse needs. For example, a person who uses a wheelchair is disabled not by the wheelchair itself, but by inaccessible buildings, lack of inclusive transport, or discriminatory assumptions about their abilities. Promoting this model means advocating for universal design, inclusive policies, and public awareness that challenge stigma and remove obstacles. By overcoming these barriers, we create a society where everyone can participate fully, regardless of their physical, sensory, or cognitive differences.

### Teaching methods

- **Interactive discussion:** Explore how words can empower or harm.
- **Case studies:** Tell trainees with short scenarios indicating outdated terms and ask them to rewrite using inclusive language.
- **Role play:** Practice introducing or referring to people respectfully in different contexts.



### End-of-Unit Assessment

#### Practical task

Provide trainees with a short paragraph containing outdated terms; they rewrite it using inclusive terminology.

## CHAPTER 3:

# TEACHING LEARNERS WITH SPECIAL EDUCATIONAL NEEDS

### Introduction

This chapter defines and explains concepts related to different types of disabilities that may lead to special educational Needs (SEN) for learners, causes and characteristics, to create awareness among teachers regarding the learners. This manual highlights the methods, techniques and strategies that can be used by educators to meet the special educational needs of the categories of Learners.

The chapter comprises 10 units. Trainers are encouraged to use a participative and practical approach when covering the content in this module.

# UNIT 1

## TEACHING LEARNERS WITH PHYSICAL DISABILITIES



### Learning objectives

By the end of the unit, trainees should be able to:

- Identify learners who have physical disabilities that may lead to special educational needs (SEN).
- Explain the causes of physical disabilities
- Identify and apply teaching methods, techniques and strategies to address the needs of learners with physical disabilities.
- Demonstrate positive attitudes towards learners with physical disabilities.



### Introductory Activity

Imagine arriving at school and finding that the classroom is upstairs but there is no ramp. What physical barriers might learners with physical disabilities face in this situation? What support do they need to participate fully in learning and play? This activity will help us begin to understand the experiences and needs of learners with physical disabilities



### Content Summary

## 1.1. Definition of physical disabilities

Physical disability is any functional limitations caused by impairments of the limbs, fine and/or gross motor dysfunctions. Not all physical disabilities also lead to special educational needs (SEN). See the definition of SEN in the first edition of this study manual.

Physical disability is defined as a damage or loss of a body part within musculoskeletal and/or neurological body systems, which may affect the functional ability of a person to move or coordinate movement.

Musculoskeletal conditions involve the joints, limbs and associated muscles. Neurological conditions involve the central nervous system, i.e. brain, spinal cord or peripheral nerves, which affect the ability to move or to coordinate movements.

## 1.2. Causes and characteristics of physical disabilities

Physical disabilities may be caused by a wide range of conditions, such as:

- Partial or total paralysis or traumatic brain injury
- Stroke
- Cerebral palsy
- Muscular dystrophy & Multiple sclerosis
- Arthritis
- Amputation
- Carpal tunnel syndrome
- Spina bifida
- Osteogenesis imperfect
- Orthopedic conditions
- Congenital malformation of the limbs.



Health conditions and disorders such as cancer, cystic fibrosis, HIV and AIDS, active sickle cell disease, diabetes, and respiratory cardiac disease may also consequently impair strength, speed, endurance, coordination, manual dexterity, and overall mobility. Physical impairments don't just affect mobility; they can also limit a person's manipulation of materials, such as pen and paper, legibility of writing, and ability to sit for long periods of time.

We cannot cover every cause in this module, but below are described some of the most common causes of physical disabilities.

### 1.2.1 Cerebral palsy

#### Definition

Cerebral palsy is a term used to describe a group of chronic conditions affecting body movements and muscle coordination. "Cerebral" refers to the brain and "palsy" to a disorder of movement or posture. If someone has cerebral palsy, it means that because of an injury to his/her brain (cerebral) s/he is not able to use some of the muscles in the normal way (palsy). Children with cerebral palsy may not be able to walk, talk, eat, play and write in the same ways as most other children.

Cerebral palsy is characterized by an inability to fully control motor functions, particularly muscle control and coordination. Depending on which areas of the brain have been affected, people with cerebral palsy may experience one or more of the following:

- Muscle tightness
- Involuntary movement
- Disturbance in gait and mobility

- Abnormal sensation and perception
- Impairment of sight, hearing or speech
- Seizures or spasm.

### Types of cerebral palsy

All children with cerebral palsy have damage to the area of the brain that controls muscle tone. As a result, they may have increased muscle tone, reduced muscle tone, or a combination of the two (fluctuating tone). Which parts of their bodies are affected by the abnormal muscle tone depends upon where the brain damage occurs. There are four main types of cerebral palsy:

- Spastic cerebral palsy: characterized by stiff and difficult movement.
- Athetoid cerebral palsy: characterized by involuntary and uncontrolled movement.
- Ataxic cerebral palsy: characterized by disturbed sense of balance and depth perception.
- Mixed cerebral palsy: a combination of these types of cerebral palsy.

### Causes of cerebral palsy:

There are many possible causes of the brain damage that leads to cerebral palsy: There are many causes of cerebral palsy and the severity of the brain damage generally depends on the type and timing of the injury. For example, in very premature babies, bleeding into the brain (intraventricular hemorrhage) can cause extensive damage. Also, the longer an unborn child goes without oxygen, the greater the extent of brain tissue damage:

- Failure of the brain to develop properly (developmental brain malformation).
- Neurological damage to the child's developing brain.
- Diseases like meningitis.
- Lack of oxygen (anoxia) at birth. A brain injury caused during delivery in many cases could have been prevented. Medical mistakes are responsible for many cerebral palsy cases.

### 1.2.2. Muscular dystrophy

#### Definition

Muscular dystrophy (MD) refers to a group of hereditary muscle diseases that weaken the muscles that are responsible for the human body articulations and movements. Muscular dystrophies are characterized by progressive skeletal muscle weaknesses due to defects in the ability of the body to produce proteins that generates muscles, and/or the death of muscle cells and tissues. Most types of MD are multi-system disorders with manifestations in body systems including the heart, gastrointestinal and nervous systems, endocrine glands, skin, eyes and other organs.

It affects the ability to do things like walk, sit upright, breathe easily, and move the arms and hands. There are several major forms of muscular dystrophy, which can affect the muscles to

varying degrees. They are all characterized by ever growing muscle weaknesses that lead to other health problems. In some cases, MD starts causing muscle problems in infancy, in others, symptoms don't appear until adulthood.

There is no cure for MD, but researchers are quickly learning more about how to prevent and treat it. Doctors are also working on improving muscle and joint function and slowing muscle deterioration so that those with MD can live as actively and independently as possible.

## Characteristics

Many children with muscular dystrophy follow a normal pattern of development during their first few years of life. But with time common symptoms begin to appear.

A child who has MD may start to stumble, waddle, have difficulty going up stairs, and toe walk (walk on the toes without the heels hitting the floor). A child may start to struggle to get up from a sitting position or have a hard time pushing things, like a wagon or a tricycle.

Children with MD often develop enlarged calf muscles (called calf pseudo hypertrophy) as muscle tissue is destroyed and replaced by fat.

### 1.2.3. Spina bifida

#### Definition

Spina bifida is a birth defect that involves the incomplete development of the spinal cord or its coverings. The term Spina bifida comes from Latin and literally means split or open spine. Spina bifida occurs at the end of the first month of pregnancy when the two sides of the embryo's spine fail to join together, leaving an open area. In some cases, the spinal cord or other membranes may push through this opening in the back. The condition is usually detected before a baby is born and treated right away.

#### Cause of spina bifida

The causes of spina bifida are largely unknown. Some evidence suggests that genes may play a role, but in most cases, there is no familial connection. A high fever during pregnancy may increase a woman's chances of having a baby with spina bifida. Also, a mother with epilepsy who have taken the drug (valproic acid) to control seizures may have an increased risk of having a baby with spina bifida.

#### Types of spina bifida

There are two forms of spina bifida:

Spina bifida occulta is the mildest form of spina bifida (occulta means hidden). Most children with this type never have related health problems, and the spinal cord is often unaffected. Spina bifida manifesta includes two types of spina bifida:

- *Meningocele* involves the meninges, the membranes responsible for covering and protecting the brain and spinal cord. If the meninges push through the hole in the

vertebrae (the small, ring-like bones that make up the spinal column), the sac is called a meningocele.

- *Myelomeningocele* is the most severe form of spina bifida. It occurs when the meninges push through the hole in the back, and the spinal cord also pushes through. Most babies who are born with this type of spina bifida also have hydrocephalus, an accumulation of fluid in and around the brain. Because of the abnormal development of and damage to the spinal cord, a child with myelomeningocele typically has some paralysis. The degree of paralysis largely depends on where the opening occurs in the spine. The higher the opening is on the back, the more severe the paralysis tends to be.

Children with Spina Bifida often have problems with bowel and bladder control, and some may have attention deficit hyperactivity disorder.

## 1.3. Methods of addressing educational needs of learners with physical disabilities

One of the first considerations in the effective teaching of individuals with physical disabilities is a positive attitude towards the learner's potentials and limitations, understanding of his/her difficulties and the degree of educational limitation it causes. Once a child's physical needs are understood, the teacher can determine which strategy can be used to support the learner. Strategies should be unique to each child's needs. Generally, the teacher should take into account the following strategies:

### 1. Seating & classroom arrangements

- Arrange desks with wide aisles for wheelchair/mobility aid movement (at least 90–120 cm).
- Place learners where they can see the board/teacher clearly without obstacles.
- Avoid isolating them at the back, integrate seating among peers.

### 2. Accessibility in classroom

- Provide adjustable-height desks/chairs so a learner in a wheelchair can sit comfortably at a desk.
- Ensure tables are stable (no wobbling) to support learners who lean for balance.
- Consider how to improve physical accessibility of the school and classroom environment.

### 3. Teaching & Instructional adaptations

- Use multi-sensory teaching materials (visual aids, tactile objects, audio) so learners who can't write quickly still engage.
- Give digital copies of notes or provide handouts, instead of relying solely on- board writing.
- Encourage use of ICT tools (laptops, tablets, voice-to-text apps if available).

### 4. Peer & group work

- Form cooperative groups so learners with physical difficulties can contribute according to their strengths.

- Assign rotating peer buddies for notetaking, carrying materials, or helping during group tasks.

## 5. Classroom routines

- Start lessons with a quick recap to help learners who arrive late due to mobility challenges.
- Build extra support/ time between activities so they aren't rushed.

## 6. Classroom environment

- Keep walkways free from bags, chairs, or clutter.
- Label classroom areas clearly for easy navigation.
- Provide accessible storage space for books/materials at reachable height.

## 7. Assessment & feedback

- Allow typed assignments and other means of presentations (eg. Verbal) if handwriting is slow or painful.
- Use continuous assessment rather than relying only on timed written exams.
- Give extra oral participation marks to balance tasks requiring physical effort.

## 8. Teacher attitudes & awareness

- Model inclusivity by involving learners with physical disabilities in classroom leadership (e.g., group leaders, presenters).
- Provide positive reinforcement not just for academic achievement but also for independence and effort.
- Foster peer sensitivity and social inclusion by teaching empathy and discouraging stigma.



### End-of-Unit Assessment

#### Activity:

- Discuss the characteristics of learners who have physical disabilities.
- Explain different causes of physical disabilities.
- How can you help a learner with physical disabilities to learn and achieve in your class?

# UNIT 2

## TEACHING LEARNERS WITH VISUAL DIFFICULTIES



### Learning objectives

By the end of the unit, trainees should be able to:

- Identify learners who have visual difficulties that may negatively affect learning
- Explain the causes of visual difficulties
- Identify and apply teaching methods, techniques and strategies to support the needs of learners with visual difficulties.



### Introductory Activity

In groups, read and analyze the case study and answer the questions below:

#### The case of Gatera

Gatera is a 16-year-old boy in Senior three. He was diagnosed at 9 months with vision loss and was enrolled in an early intervention program where he learned to orient himself and move safely around. With the help of a professional teacher for the blind and low vision, Gatera was successfully mainstreamed in the neighborhood ordinary school. He was also taught independent living skills and was fully included in his high school classes, where he is planning to attend college. Gatera enjoys socializing with his sighted peers, thought, only few learners still have trouble relating to his disabled situation.

#### Tasks:

1. Discuss factors that contributed to Gatera's satisfactory level of social integration and academic performance. Find out about:
  - Teachers and learners' community attitudes?
  - Teaching approaches and resources used?
  - Types of independent skills developed?
2. What can be the role of the school in developing positive attitudes towards learners with disabilities?
3. Discuss the causes of visual difficulties; and how to address the needs of learners with such difficulties.



### 2.1. Definition of visual difficulties

The term 'Visual difficulties' is used to describe any kind of vision loss, whether total or partial vision loss (an umbrella term that encompasses all types of vision losses). Visual difficulty can be:

- Any abnormality or problem in vision
- Any factor that can cause one to see less
- Inability of the eye or brain or both to visualize things

Learners with visual difficulties (partially sighted or blind), require particular assistance to develop competencies needed to be included in society. This is not because they are unable to learn like others, but because teachers need to adapt pedagogy and materials to the learners' needs (eg. an assistive device such as glasses, a cane or software).

### 2.2. Characteristics of visual difficulties

Some characteristics of visual difficulties are:

- Absence of eye balls
- Abnormal size of the eye ball: too big or too small
- Appearance of the eye, discoloration of the eyes, red eyes, etc
- Complaints about blurred or unclear vision
- Pus or abnormal fluids from the eye
- Itching and scratching of the eyes
- Improper development of the eye lashes.

*NB: the list is not exhaustive*

### 2.3. Characteristics of learners with visual difficulties

Learners with visual difficulties can be characterized by different behaviors, and teachers need to understand the educational implications:

- Problems reading the notes from the chalkboard or scanning information quickly
- Distortion of perception: i.e. what is being seen and perceived
- Problems in maintaining and changing focus at near and far distances
- Visual discomfort and fatigue.

## 2.4. Causes of visual difficulties

**Parental problems** Poor nutrition of pregnant mothers, eating foods that contain insufficient energy, proteins, vitamins and mineral salts; alcohol use, smoking or strong drug-taking; cultural practices where women are not allowed to eat some nutritious foods; premature births resulting in babies being born with premature retina.

**Birth problems:** Inappropriate use of tools to deliver the baby; difficult birth; baby may not immediately start breathing, which is dangerous for the brain;

**Malnutrition of the child from birth** lack of a balanced diet, especially insufficient vitamin A, which can cause night blindness or dry eyes.

**Injuries:** accidents which may affect different parts of the eye; brain damage due to injuries/disease; e.g. cerebral palsy; chemicals/poison in water, air and food, plus the use of traditional herbs; pregnant mothers exposed to dangerous chemicals at work; poor hygiene related to poverty and ignorance.

**Diseases/conditions:** meningitis; cerebral malaria; glaucoma; cataract; malaria.

**Old age:** As people grow old, they tend to become susceptible to some diseases such as cataract, long-sightedness.

**Heredity:** genetic/parental diseases, diabetes, allergy.

## 2.4. Strategies of accommodating learners with visual difficulties in class

Many learners are visually impaired, but are fortunate enough to have the impairment corrected by glasses and other optic aids. However, for some with severe difficulties that cannot be corrected, such learners can only learn with alternative and adapted assistance.

A learner with moderate visual difficulties can perform visual tasks almost like a sighted learner, with the use of special aids and lighting. A learner with severe visual difficulties may need extra time and energy to perform visual tasks, even with visual aids. A learner with a profound visual impairment will find it difficult to perform gross visual tasks, and detailed tasks virtually impossible. Below are some examples of strategies to address their learning needs:

### Sitting arrangements

For learners with some vision, it is important that they sit in a position in the classroom where they can see on the board as clearly as possible.

It may also be important for them not to sit directly in very bright light (such as right next to a window), or in very dark places (such as corners furthest from the window).

However, it is essential to ask the learner where they feel most comfortable in the classroom, where they feel they can see the board and their books most clearly, and thus where they feel they will learn best. It is the teacher's job to facilitate a learner with visual impairment to move and sit in the 'best' location; but it is not necessarily always the teacher's job to decide, on their own, where that location should be.

### **Organizing the classroom**

When a learner with visual impairment starts in a new classroom, the teacher and/or other children should help to orient them to where the main facilities and obstacles are, and where to find the learning materials they will need on a daily basis (books, pens, etc).

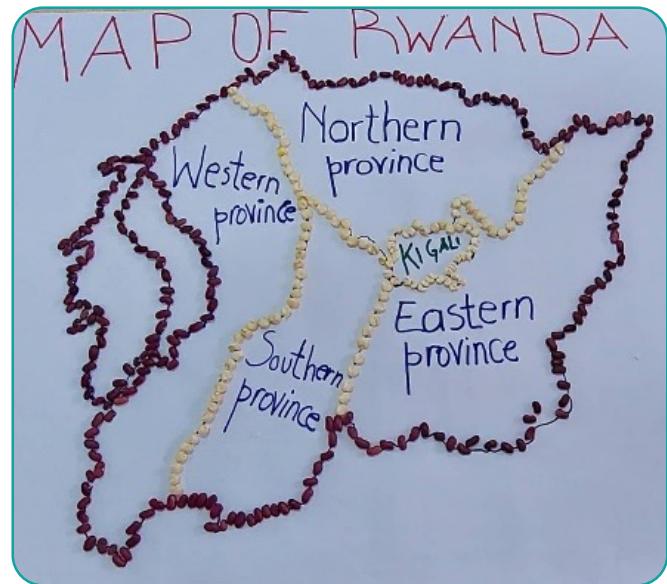
Teachers should ensure that they tell children about any changes to the layout of the classroom (e.g. desks or cupboards that have moved; or other new obstacles that have arrived). The teacher or other learners should guide visually impaired children to learn these changes.

Teachers and learners without visual impairment should learn to avoid leaving doors and drawers ajar (leave open) or leaving bags on the floor in aisles between desks. They should take the habit of tucking their chairs under their tables/desks when not being used, to minimize the number of obstacles in the room.

The classroom instructions and regulations could be "Brailled", that is, Braille labels could be placed throughout the room, including in places where there are written signs, and on the various pieces of furniture. This will help learners with visual impairment to navigate around the room and find key objects or equipment needed during lessons. It will help them practice reading Braille (if they are new to it), and give sighted children a chance to start learning Braille.

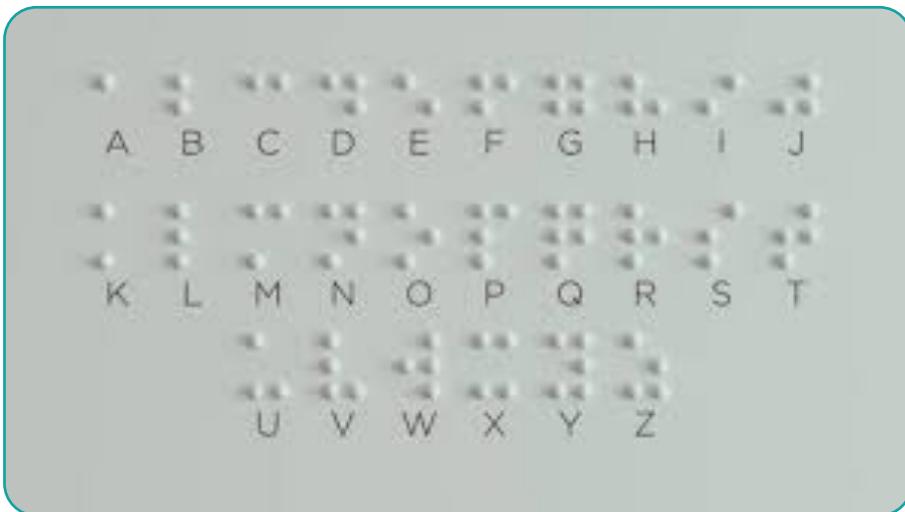
### **Example of tactile map:**

Use real object and tactile materials to understand a literary description. For instance: As teacher if you want to teach Rwandan province and its location, teacher can use locally tactile map like:



A map of Rwandan Provinces

### Teaching of Braille Alphabet



Braille alphabets

### Effective communication

To support learners with visual impairments, teachers and sighted classmates should adopt inclusive communication and guidance strategies:

- Teachers should announce their presence when entering or leaving the room and use auditory or tactile signals instead of relying solely on visual cues.
- When addressing a learner with visual impairment, it's important to say their name and clearly indicate when a conversation is ending, rather than walking away silently.
- Sighted students should introduce themselves before speaking, especially at the beginning of the school year when voices are unfamiliar.
- Both teachers and peers should learn proper guiding techniques, such as offering an arm and describing environmental features like steps or door placement.
- Additionally, using the clock-face method and clear directional language (e.g., "forward" or "right") helps learners with visual impairment navigate spaces more confidently and safely.

## Orientation and Mobility (O&M)

### Definition

O&M help individuals to travel safely and independently. Orientation refers to understanding one's position in space, while mobility is the ability to move through it.

Training on O&M prepares individuals to:

- Navigate both familiar and unfamiliar environments.
- Assess new intersections and routes.
- Make informed decisions without needing assistance for every journey.

Mobility aids empower individuals with visual impairment or have low vision to navigate their environment safely and independently. Common aids include:

- **White canes:** Used to detect obstacles and guide movement.
- **Guide dogs:** Trained to assist with navigation and safety.
- **Monoculars:** Handheld devices that magnify distant signs and transport information.
- **Sunu band:** A modern wearable that uses sonar and vibrations to detect nearby objects.

### How to use a white cane?

1. **Choose the right cane:** select a cane that reaches your armpit when the tip touches the ground.
2. **Grip:** hold the grip loosely; swing the cane side to side, keeping the tip on the ground, covering shoulder width.
3. **Walking technique:** alternate canes wings with steps(right foot, left cane swing). Keep your head up and shoulders relaxed.
4. **Navigating stairs**
  - Going up: hold cane vertically, tap each step.
  - Going down: let the tip fall to the next step or two ahead. Avoid swinging to prevent collisions.
5. Tell students who have visual impairment to build confidence before navigating alone.

### Travel techniques for learners with visual impairment

Individuals with visual impairments have several options for navigating their environment:

- **Human guide:** holding onto someone's arm for support.
- **White cane:** detects obstacles and elevation changes.
- **Guide dog:** trained to assist with safe navigation.
- **Optical/electronic aids:** devices like monoculars or sonar-based wearables.
- **No aid:** some rely solely on sensory input and environmental familiarity.

## Identifying the street

- Often not labeled accessibly.
- Mental maps and block counting help.
- Assistance from others may be needed.

## Crossing the street

Pedestrians/ persons with visual impairments use cues like:

- Curb ramps or slope
- Detectable warnings (truncated domes)
- Building lines and open intersection sounds
- Traffic sounds (parallel and perpendicular)
- Presence of pedestrians and intersecting sidewalks

## Understanding traffic control

Pedestrians/ persons with visual impairments must determine:

- Type of signal system
- Location and function of pushbuttons
- Timing and alignment before walk interval
- Whether cars turn during the walk phase
- Presence of secondary buttons on medians
- Audible cues from traffic surge



### End-of-Unit Assessment

#### Activity:

1. Define visual impairment.
2. Explain some causes and characteristics of visual impairment.
3. Discuss different strategies that may be used to teach learners with visual impairment
4. Explain briefly the importance of orientation and mobility

# UNIT 3

## TEACHING LEARNERS WITH HEARING DIFFICULTIES



### Learning objectives

By the end of the unit, trainees should be able to:

- Identify learners with hearing difficulties.
- Explain the causes of hearing difficulties.
- Apply suitable teaching methods, techniques and strategies to address educational needs of learners with hearing difficulties.
- Demonstrate positive attitudes towards learners with hearing difficulties.



### Introductory Activity

In groups, read and analyze the case study below:

#### The case of Uwera

Uwera is a 6 years old girl who has just started Primary 1. She has a hearing loss resulting from repeated and severe ear infections throughout her early childhood. Her hearing loss is considered hard-of-hearing because she has some residual hearing and uses hearing aids. Uwera's language and speech skills are delayed because she could not hear adequately since early childhood. Uwera is being assisted by an audiologist who ensures that her devices are in good working conditions and she uses the devices in her schooling.

#### Tasks:

1. What was the cause of hearing loss in Uwera's case? Brainstorm on other possible causes of hearing impairments.
2. Discuss on challenges Uwera and learners with similar difficulties may face in school.
3. What teachers can do to remove barriers to learning for learners with hearing difficulties?



### Content Summary

#### 3.1. Definition of hearing difficulties

Hearing difficulty is a broad term used to describe the complete or partial loss of hearing.

## 3.2. Characteristics of learners with hearing difficulties

The following are characteristics indicating that a child has hearing difficulties:

- Does not turn his head to sound;
- Has an unnaturally low or high pitched voice;
- Depends heavily on his eyes when talking to others;
- Has not started talking by the age of two;
- Does not follow what is being said;
- Finds it difficult to mix with others;
- Has a physical abnormality of the ears;
- Usually asks the teacher to repeat what s/he said.

## 3.3. Causes of hearing loss

There are different factors that can cause hearing impairment, such as:

- Shortage of oxygen at birth (prolonged labor);
- Heredity, which may affect some of the family members;
- Illness of the mother during pregnancy;
- Childhood illness such as mumps, measles and meningitis;
- Frequent ear infections;
- Excessive hard wax in the ear.
- Accidents
- Some medicines, particularly certain antibiotics
- Frequent or sudden very loud noise
- Old age.

## 3.4. Types of hearing loss

There are four types of hearing loss:

- **Conductive Hearing Loss:** Hearing loss caused by something that stops sounds from getting through the outer or middle ear. This type of hearing loss can often be treated with medicine or surgery.
- **Sensorineural Hearing Loss:** Hearing loss that occurs when there is a problem in the way the inner ear or hearing nerve works.
- **Mixed Hearing Loss:** Hearing loss that includes both a conductive and a sensorineural hearing loss.
- **Auditory Neuropathy Spectrum Disorder:** Hearing loss that occurs when sound enters the ear normally, but because of damage to the inner ear or the hearing nerve, sound isn't organized in a way that the brain can understand.

There are also two types of hearing difficulties related to language:

- Post lingual hearing loss
- Pre-lingual hearing loss.

### **Post-lingual hearing loss**

This group consists of those children who can express themselves using speech or spoken languages, but cannot receive messages through the same medium of communication. They become Deaf or Hard-of-hearing after learning how to speak, but their speech tends to deteriorate if they do not practice speaking. To receive messages, they may need to use sign language, written activity and sometimes lip-reading. This group can easily be integrated into a regular class when their teacher has skills in sign language and total communication.

### **Pre-lingual hearing loss**

This group of learners is made of those who are born completely Deaf or Hard-of-hearing. Some may have also lost their hearing before learning spoken language. These learners use signs language as their system of communication. In this language the sense of hearing or sounds plays no significant role in communication.

People with hearing loss use oral or manual means of communication, or a combination of both. Oral communication includes speech (vocal communication), lip-reading and the use of residual hearing, while manual communication includes sign language and finger spelling.

## **3.5. Strategies to accommodate learners with hearing loss**

The greatest challenge learners with hearing difficulties meet is communication, because the majority of the people in their communities focus on oral communication methods. It is therefore important that parents, caregivers, teachers and peers communicate using all modes of communication: body movement or signs, facial expressions, sound and words.

Deafness or Hard-of-hearing conditions do not necessarily affect a person's intellectual capacity or ability to learn. However, children who are either hard of hearing or deaf will generally require some form of individual attention – offered in an inclusive setting – in order to receive an adequate education. Such services may include:

- Early identification, assessment (by an audiologist), or intervention
- Use sign language interpreters or learn basic sign language if possible.
- Avoid distraction (face visible, good lighting, avoid covering your mouth,etc.).
- Provide captioning for videos and multimedia.
- Check for understanding frequently don't just assume they followed.
- Arrange seating in a semi-circle or U-shapes other learner can see everyone.
- Reduce background noise and provide good lighting.
- Position yourself where the student can see your face and lips clearly.

- Use visual signals (hand waves, light flash, gestures) to get attention.
- Visual aids:charts,pictures,diagrams,written notes, slides.
- Bilingual approach: support both sign language and written/ spoken language.
- Hands-on activities:encourage participation through practical demonstrations.
- Peer support: pair with classmates for group work and peer learning.
- Write key points on the board or share lecture notes beforehand.
- Speak clearly and at a natural pace (don't exaggerate lip movements).
- Break information into smaller steps for clarity.
- Use adaptive technology (speech-to-text apps, captioning tools, hearing assistive devices).
- Use of communication board
- Allow alternative assessments in classroom (signed responses, written, visual projects).
- Provide additional time to complete the tasks

#### Practical tips are the following:

- Organize the classroom so that all the children are sitting in a U shape. This way the children can see each other, which will make it easier for children with hearing impairment to use sign language, read lips and understand mimics, thereby making it possible to participate more actively in discussions and classroom activities.
- Spend some time giving face-to-face instruction, since group situations can be quite challenging for children with hearing impairment.
- Look at the child (with hearing impairment) while speaking to her/him.
- Speak slowly and clearly, but not too loud.
- Use short, simple, and clear sentences.

## 3.6. Bilingual education of learners with hearing impairment

#### Core principles

- **Prioritize first language acquisition:** ensure learners who are deaf develop full linguistic competence in sign language before introducing a second language.
- **Embrace bilingualism:** teach the second language (typically the spoken/written language of the wider community eg. Kinyarwanda) through sign language, not in place of it.
- **Focus on literacy, not speech alone:** emphasize reading and writing skills over speech production, recognizing that literacy is key to academic success.

#### Pedagogical strategies

##### 1. Bilingual teaching techniques

- Use code-switching between sign and written forms.
- Present side-by-side texts: sign language videos with written captions.
- Compare grammar and structure of sign language with spoken/written language.

## **2. Visual & Technological supports**

- Use visual aids: charts, pictures, videos, real objects.
- Use technology tools:
  - Captioned videos
  - Sign language dictionary apps

## **3. Student-centered activities**

- Encourage creation of sign-to-text glossaries.
- Promote peer-to-peer learning in sign language.
- Use group discussions, storytelling, drama, and role-play in both languages.
- Develop bilingual storybooks (sign video + written text).

## **4. Cultural & Community engagement**

- Teach Deaf culture, Deaf history, and the value of bilingualism.
- Foster pride in sign language as a legitimate first language.
- Invite Deaf role models into classrooms.
- Involve Deaf organizations and the broader community.

## **5. Family involvement**

- Provide sign language training for parents and caregivers.
- Encourage families to use sign language at home to reinforce first-language acquisition.

## **6. Sign Language alphabet:** Tell trainees to practise sign language by spelling out their names (refer to the alphabet in Annex 3).

## **7. Assessment & Evaluation**

- Assess learners in both languages, not just the spoken/written one.
- Use performance-based assessments:
  - Sign language presentations
  - Bilingual portfolios
- Value progress in sign fluency and literacy development equally.

Bilingual education for learners with hearing impairment is not merely a teaching approach but it is a commitment to equity, inclusion, and linguistic empowerment.

By prioritizing sign language as a foundational first language for learners who are deaf through culturally responsive language strategies, teachers enhance the full potential of learners who are deaf.



## End-of-Unit Assessment

Choose the correct answer

1. Bilingual Deaf Education emphasizes the use of:
  - a. Only spoken language
  - b. Only sign language
  - c. Both sign language and written/spoken language
  - d. Gestures without structure
2. Which of the following is a key benefit of bilingual education for learners who are deaf?
  - a. Exclusion from hearing culture
  - b. Improved literacy and communication skills
  - c. Avoiding written language
  - d. Learning only through memorization

### Practical advice

- Be consistent in the use of language.
- Use clear mimics and gestures.
- Ask the child (if s/he has an oral language) to repeat what s/he has understood.
- Write down key words from the information given during the class and give it to the child at the end of every day.
- Work together with an audiologist (if available) to teach and encourage the child to use her/his residual hearing to the maximum extent possible, even if the preferred means of communication is sign language.
- Reduce all unnecessary noise, as multiple sources of sound will make it more difficult for the child to use her/his residual hearing. This is also important if the child is using a hearing aid.
- If some of the classrooms in the school are noisier than others (e.g. noise from busy roads, airports or factories), the school should be flexible and move any classes with children with hearing impairment (as well as classes with children with visual impairments or other disabilities) to less noisy rooms.
- Be flexible with time, as most of the children with hearing impairment (both deaf and hard of hearing) will struggle to understand everything that goes on in the classroom (as a result of their hearing loss).
- Focus more on content than on grammar when assessing the writing of children who primarily use sign language for communication. Because the grammar of sign languages is very different from written languages, these children are in fact writing in a “second” language.

Please take into consideration that:

- Facial hair (e.g. beards and moustaches) worn by male teachers may obscure lip reading and facial expressions.

- Face covering – veils covering eyes, eyebrows, nose, mouth and cheeks (worn by some teachers and fellow learners), may obscure leap reading and facial expressions.

The majority of children who are deaf (profound hearing loss) are born to hearing parents. The school should therefore attempt to provide instruction for parents on the implications of deafness within the family.

A learner who is hard of hearing may also need more time to learn than other learners, as s/he will not always be able to hear the teacher's voice and what other children talk about in the classroom. Therefore, much of the information given during the lessons will be lost.



## End-of-Unit Assessment

### Activity

1. Describe some characteristics of learners who have hearing difficulties?
2. Explain some causes of hearing difficulties.
3. Discuss the suitable teaching methods, techniques and strategies used in the classroom to address the learning needs of learners with hearing difficulties.

# UNIT 4

## TEACHING LEARNERS WITH DEAF-BLINDNESS



### Learning objectives

By the end of the unit, trainees should be able to:

- Identify learners with Deaf-Blindness.
- Explain the causes of Deaf-Blindness.
- Apply suitable teaching strategies to address the needs of learners with Deaf-Blindness.
- Demonstrate positive attitudes towards learners with Deaf-Blindness.



### Introductory Activity

In small groups, discuss:

1. The characteristics of children who are Deaf-Blind
2. The causes of Deaf-Blindness.
3. Whether Deaf-Blindness children are educable or not.
4. Ways a teacher may use to help such children learn



### Content Summary

## 4.1. Introduction to Deaf-Blindness

People with visual impairment often depend more on their hearing (e.g. they will listen for traffic before crossing the road). People who are deaf or hard-of-hearing will rely on their sight (e.g. they might lip-read or use sign language to communicate with others). People who are Deaf-Blind have greater difficulty because they have both sensory challenges. However, with the appropriate support they are able to learn. The key to providing that support is using appropriate communication.

## 4.2. Types of Deaf-Blind

People with Deaf-Blindness may fall into three groups:

- People with residual sight but who are completely deaf
- People with residual hearing who are completely blind
- People without residual sight or hearing.

Residual sight or hearing is often not sufficient for a person to be totally dependent on it. Learner with Deaf-blindness without any residual sight or hearing need more support than those with residual sight or hearing.

Many people described as Deaf-Blind can recognize familiar sounds, might understand some speech, and may be able to speak – especially if they became Deaf-Blind later in life. Others have enough sight to see and move around in familiar surroundings, recognize people they know, see people signing up if close, and perhaps read large print. Deaf-Blindness therefore covers a range of sensory difficulties.

## 4.3 Characteristics of a person with Deaf-Blindness

It is not easy for a sighted and hearing person to understand what it is like to be deaf- blind. Activities in which participants wear blindfolds and earplugs/ear defenders, and are led around unfamiliar environments and asked to do daily tasks like eating or identifying objects, may help raise awareness of what it is like to be Deaf-Blind.

Key difficulties experienced by Deaf-Blindness people include:

- Finding out information;
- Communicating with others;
- Moving around the environment.

### Finding out information

The idea of 'information' also implies important sources such as newspapers, books, radio and television, as well as information contained in job application forms or announcements. Very often someone who is Deaf-Blind cannot access this information. They also face more difficulties finding out information that helps them participate in the daily life of their community, such as the meaning behind facial expressions or the shape of objects that cannot be reached, or the sound of an approaching vehicle.

### Communicating with others

People who are Deaf-Blind might use one or more ways of communication. Some are based on knowing and using language (including sign language, not just speech); others include simple gestures, facial expressions and movements of the body.

Some people who are deaf blind may use a form of sign language, e.g. drawing with their finger the shapes of letters on another person's hand; or using different positions on the person's fingers and palm to mean different letters of the alphabet. Outside of their immediate friends and family, people with Deaf-Blindness are unlikely to meet many people who can communicate with them straight away.

## Moving around the environment

We rely on our sight to move around – avoiding obstacles, planning routes or climbing stairs. Someone who is blind may be able to compensate for lack of sight by using cues such as traffic sounds to know that cars are approaching, and that the bleeping sound means it is safe to cross the road. Sounds coming from washing machines or televisions might help the person to navigate around their house. A person with Deaf-Blindness is not able to use these sounds to help with moving around, especially in unfamiliar surroundings.

## 4.4. Strategies to address the learning needs of learners with Deaf-Blindness

Teaching a learner with Deaf-Blindness is very different from teaching a learner who is deaf or blind. Learners who are deaf can benefit from sign language interpreters or other visual enhancements in the classroom. Learners who are blind can hear what the teacher says and can take notes in Braille if they have the necessary equipment. Learner with Deaf-Blindness, however, have difficulties using either sense to make up for the other. Unless the learner has strong residual sight or hearing, you may need to approach teaching him/her, by following the tips:

- Use a combination of tactile sign language, object symbols, gestures, pictures, Braille, and speech.
- Applied individualised teaching and learning strategies depending on each learner's needs.
- Hands-on signing, tactile cues, and guiding the child's hands to explore.
- Use consistent objects to represent activities (e.g., a spoon for eating, a ball for play). Object of reference is consistent or permanent
- Braille displays, vibrating alert devices, communication boards, and speech- generating devices.
- Keep objects in the same place to reduce confusion.
- Remove barriers, mark important areas with tactile or textured cues.
- Reduce unnecessary noise and visual clutter.
- Encourage active exploration with touch and movement.
- Teach concepts through real-life experiences (e.g., teaching "washing hands" by guiding them through the process).
- Break activities into small steps and teach them gradually.
- Use touch, smell, vibration, movement, and taste to reinforce learning.
- Establish secure, consistent interactions.
- Pair with peers who can help in inclusion activities.
- Train families in tactile communication and daily living support.
- Provide opportunities for the child to make decisions, even small ones, to boost confidence.
- Involve teachers trained in Deaf-Blindness, orientation & mobility, and special education.

Learners with Deaf-Blindness will need a lot more support. From a young age, they may have difficulty learning even the basics in the same time span as their peers. As a teacher, remember that children with Deaf-Blindness learn from what they do, not from what they hear or see. Before you can teach, you have to gain their trust by keeping them safe and secure. Having a regular routine in your classroom can help to build this trust as well. In general, a learner with Deaf-Blindness should be taught individually. It is important to keep in mind that, the learner will need to learn manual/ tactile sign language, which gives you a method to communicate with him/her.

- Leaning up matters. It is best done at the end to avoid distracting the child during the activity
- Use appropriate communication methods to help learners understand concepts of things and events, and therefore construct human relationships.
- Prepare and engage learner with Deaf-Blindness in interesting activities such as: water bathing and swimming, and activities that stimulate a relatively large area of the skin.
- Children with Deaf-Blind can be taught to enjoy dance and movement. There may be some learners with total hearing loss who are not able to appreciate the music, but can still pick up its vibrations. Music needs to be played very loud with the base tone turned high.



### End-of-Unit Assessment

1. Describe the characteristics of learners with Deaf-Blindness.
2. Explain the activities that teachers can use to help learners with Deaf-Blindness.
3. Explain how can negative attitudes affect learning for learners who are deaf- blind.
4. Propose practices that may facilitate the integration of learners with Deaf-Blindness in schools.

# UNIT 5

## TEACHING LEARNERS WITH INTELLECTUAL DISABILITIES



### Learning objectives

By the end of the unit, trainees should be able to:

- Identify learners with intellectual disabilities.
- Discuss causes of intellectual disabilities.
- Teaching strategies to accommodate needs of learners with intellectual disabilities.



### Introductory Activity

In small groups,

1. Discuss characteristics of a learner with intellectual disability.
2. Determine causes of intellectual disability.
3. Suggest suitable teaching strategies to help learners with intellectual disability.



### Content Summary

## 5.1. Definition of intellectual disabilities

Intellectual disability is a condition characterized by significant limitations in both intellectual functioning (difficulty with reasoning, problems solving, learning and understanding new information) and adaptive behavior (challenges in everyday life skills such as communication, self-care, social interactions, or independent living).

## 5.2. Characteristics of intellectual disabilities

Below are some of the signs indicating that a learner may have intellectual disability. If the child displays only one or two of these signs, it does not necessarily mean that he/ she has intellectual disability. These include:

- Experiences difficulties understanding what the teachers are saying, even if all the other learners seem to understand quite well;
- According to the American Psychiatric Association (2022), intellectual disability is a broad term that encompasses various cognitive impairments that can affect a person's intellectual and adaptive functioning.

**Intellectual functioning** also called intelligence refers to general mental capacity, such as learning, reasoning, problem solving. One way to measure intellectual functioning is an IQ test.

Adaptive behavior is the collection of conceptual, social, and practical skills that are learned and performed by people in their everyday lives.

The severity of intellectual disabilities can vary widely, and individuals may fall into different categories based on their level of impairment. Here are the typical categories of intellectual disabilities and their corresponding IQs:

- Mild intellectual disabilities (IQ 70-50)
- Moderate intellectual disabilities (IQ 49-35)
- Severe intellectual disabilities (IQ 34-20)
- Profound intellectual disabilities (IQ <20)

Learning areas	Categories and their descriptions			
	Mild	Moderate	Severe	Profound
Communication	<ul style="list-style-type: none"> <li>• Takes longer to pick up speech, but once they do, they speak fluently.</li> <li>• For adolescents and adults: level of communicating may be less mature</li> </ul>	<ul style="list-style-type: none"> <li>• Are slow in understanding and using language</li> <li>• Can communicate in basic, simple ways</li> </ul>	<ul style="list-style-type: none"> <li>• Limited ability to understand speech</li> <li>• Limited communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Inability to understand requests or instructions</li> <li>• Inability to use very basic non-verbal communication</li> </ul>
Social	<ul style="list-style-type: none"> <li>• Can take part in various types of social activities Able to integrate themselves socially</li> </ul>	<ul style="list-style-type: none"> <li>• May have difficulty in social situations and problems with social cues and judgment</li> <li>• Puts own experience/ feelings first</li> <li>• May have behaviour problems</li> <li>• Needs guidance in social activities</li> </ul>	<ul style="list-style-type: none"> <li>• May respond by using physical cues like opening eyes, mouth, waving the hand, ...</li> </ul>	<ul style="list-style-type: none"> <li>• May respond by using physical cues like opening eyes, mouth, waving the hand, ...</li> </ul>
Motor skills	<ul style="list-style-type: none"> <li>• Has no unusual physical characteristics</li> </ul>	<ul style="list-style-type: none"> <li>• May also have physical impairment (visual, epilepsy, ...)</li> </ul>	<ul style="list-style-type: none"> <li>• Visible motor impairment</li> </ul>	<ul style="list-style-type: none"> <li>• Has obvious physical and congenital abnormalities</li> <li>• Has difficulties in movement coordination</li> </ul>

Cognitive	<ul style="list-style-type: none"> <li>Is slower in all areas of conceptual development</li> <li>May have problems with reading, writing and math</li> <li>Can find solutions for a problem to a certain level</li> </ul>	<ul style="list-style-type: none"> <li>Can learn basic reading, writing, and counting skills</li> <li>Lives in the now, difficult to think about past and future</li> </ul>	<ul style="list-style-type: none"> <li>Has severe damage to, or abnormal development of, their central nervous system</li> <li>Can understand linguistic associations</li> </ul>	<ul style="list-style-type: none"> <li>Has visible cognitive abnormalities</li> </ul>
Activities of daily living (ADL)	<ul style="list-style-type: none"> <li>Can learn practical life skills</li> <li>Can live independently with minimal support</li> <li>Can travel alone to nearby, familiar places</li> </ul>	<ul style="list-style-type: none"> <li>Is able to learn basic health and safety skills</li> <li>Can live independently with moderate levels of support</li> <li>Can travel alone to nearby, familiar places</li> </ul>	<ul style="list-style-type: none"> <li>Is able to learn simple daily routines</li> <li>May learn very simple self-care</li> <li>Requires daily assistance with self-care activities and safety supervision</li> </ul>	<ul style="list-style-type: none"> <li>Cannot live independently</li> <li>Requires close prompting and help in all ADLs</li> <li>Requires 24-hours assistance</li> </ul>

- Has language development delays than age mates in the same class, and may speak in a way that only her/his immediate family can understand;
- Moves, speaks and learns more slowly than most of her/his peers;
- Does not play and/or interact well with other children of her/his age;
- Has poor motor coordination, is clumsy and moves very differently from other learners of her/his age;
- Has a short attention span;
- Has poor short-and/or long-term memory;
- Is hyperactive, behavior challenges, or disruptive
- Is lethargic or too slow in activities
- Has difficulties copying shapes, such as circles and squares, etc.
- Mixes up letters (although this is quite common among all school beginners)
- Has problems when doing simple puzzles.
- The common characteristic is that the ability to learn, as well as social adaptation, is impaired.

### 5.3. Levels of intellectual disabilities

**Mild intellectual disability** The learners will listen and talk, but may have some difficulties understanding certain concepts and have some limitations with expressive language. S/he will usually be socially well-adjusted (if growing up in an inclusive community), and be able to live an independent life after the completion of her/his schooling.

**Moderate intellectual disability:** The learner can talk, communicate and participate actively in classroom activities. S/he will also benefit from learning some activities of daily living or independent living skills, as well as social skills.

**Severe intellectual disability** .The learner can understand simple communication through signs and mimic, but has limited ability to express her/himself through spoken language. Even though many children experience great difficulties in independent living, some level of independence can be reached.

**Profound intellectual disability:** Communication skills are very limited. Communication is often made through non-verbal sounds, although some learners may have limited ability to speak. Most learners in this group will need 24hours care and attention. It is important to remember that all children can learn (if learning is understood as a wider concept than reading, writing and arithmetic), and that all children have a right to education, care and protection in a child-friendly and inclusive setting.

## 5.4. Causes of intellectual disability

Intellectual disability affect learners in class and can delay their learning progress. They also limit the learner's involvement in many activities that take place around them. There are many causes of intellectual disabilities, the common ones include:

### Problems during pregnancy

- An infection of the mother during the pregnancy can damage the foetus (Rubella and German measles are common examples);
- Attempted but failed abortions (in some countries, abortions are attempted by using herbs or traditional massages; they fail but still sometimes damage the foetus);
- Lack of nutrition during pregnancy;
- Mother's consumption of alcohol and drugs during the pregnancy;
- HIV, if not treated properly with ARV ,can also damage the growing brain of the foetus.

### Problems at birth

- Anoxia lack of oxygen during labor and birth,
- Premature birth, low birth-weight, and jaundice can all result in developmental impairment,
- Prolonged labor/difficult labor;
- Damage/injury of the child during delivery;
- Use of forceps to deliver the baby/ vacuum delivery

### Post-natal causes (after birth)

There are certain diseases that can affect the brain, such as: encephalitis, meningitis, epilepsy, cerebral malaria.

## 5.5. Strategies of accommodating learners with intellectual disabilities

Below are pieces of advice for teaching learners with intellectual disabilities:

- Use simple words and sentences when giving instructions. Check that the child has understood.
- Use real objects that the child can feel and handle, rather than just working abstractly with pen and paper. This is important for all learners.
- Do one activity at a time with the learner. Make it clear when one activity is finished and another one is starting.
- Break down a task into small steps or learning objectives. The child should start with an activity that s/he can do already before moving on to something that is more difficult. Go back one step if the learner encounters problems.
- Try to link the tasks to the learner's experience and everyday life (this is important for all children).
- Give extra practice by repeating the task a few times. This will ensure that the child masters the skill and will help increase her/his self-confidence. However, repetitions should not be exaggerated.
- Repeat a few main tasks at regular intervals so that they become "habits", to prevent skills from being forgotten.
- Ask other learners (who are doing well academically) to help their classmates with developmental impairments as part of their own social, emotional, and academic development. This can be mutually enriching.
- Be generous with praise (honest praise) and encouragement when the learner is successful and masters new skills, as well as when s/he is trying (and working) very hard.
- Motivate the other learners in class to include the child with intellectual disabilities in out-of-class play and sport activities.
- Ignore unwelcome behaviour if the child is doing it to get your attention. Give praise and attention when the child's behavior is good.

The three main principles for teaching learners with intellectual disability are:

- Divide skill development into small steps and allow for slow progression.
- Make frequent repetitions.
- Give a lot of praise and motivation.



### End-of-Unit Assessment

1. Discuss characteristics of learners with intellectual disabilities.
2. With clear examples, explain suitable teaching strategies that can be used to accommodate needs of learners with intellectual disabilities.
3. Suggest different ways of developing positive attitudes towards learners with intellectual disabilities.

# UNIT 6

## TEACHING LEARNERS WITH SPECIFIC LEARNING DISABILITIES



### Learning objectives

By the end of this unit, trainees should be able to:

- Identify learners with specific learning disabilities
- Apply suitable teaching methods, techniques and strategies to address educational needs of learners with specific learning disabilities.
- Demonstrate positive attitudes towards learners with specific learning disabilities.



### Introductory Activity

In groups, discuss characteristics of learners with specific learning disabilities in reading, writing and Mathematics. How can you help learners with such learning disabilities?



### Content Summary

## 6.1 Definition

A learning disability is a neurological disorder that affects one or more of the basic mental processes involved in understanding or in using cognitive abilities. The disability may manifest itself also in inability to listen, think, speak, read, write, and spell or to do mathematical calculations.

Learning disabilities however, should not be confused with specific learning difficulties. Learning disabilities and specific learning difficulties are often used interchangeably, but they refer to distinct concepts. A learning difficulty is a term that describes significant challenges in acquiring and using listening, speaking, reading, writing, reasoning, or mathematical abilities. The difficulties may affect multiple areas of learning and daily functioning. In contrast, a specific learning disability refers to particular challenges in one or more areas of learning, such as dyslexia (reading), dyscalculia (math), or dysgraphia (writing), while other cognitive abilities remain relatively unaffected.



Most common Specific Learning Difficulties (SpLDs)

Where a learner has difficulty with the majority of skills which is reflected in his/her learning and day-to-day living skills he/she is deemed to have a severe learning disability. However, when an individual has difficulties or weaknesses in just one or two areas in contrast to average or good cognitive skills this is called a Specific Learning Difficulty. It is very important to note that SpLDs are independent of intellectual ability, socio-economic or language background.

The term 'Specific Learning Disability (SpLD)' is a term that refers to a difference or difficulty with particular aspects of learning. The most common SpLDs are dyslexia, dyspraxia, attention deficit-hyperactivity disorder (ADHD), dyscalculia and dysgraphia. An individual may have one of these independently or they can co-exist as part of a wider profile.

Specific Learning Difficulties (SpLDs) exist on a continuum from mild to moderate through to severe. There are common patterns of behaviour and ability, but there will be a range of different patterns of effects for each individual. A simple way to define these cognitive skills is to describe them as the underlying brain skills that make it possible for us to think, remember and learn. We all have relative strengths and weaknesses in our cognitive profiles but overall most of our skills will fall in the normal range.

Having a SpLD does not predict academic potential. However, the path to achievement may be harder and may require far greater (usually unseen) effort and a distinct set of skills. The challenge and opportunity in an educational context – for teacher and learner – is to be aware of the specific effects of these differences and to explore a variety of methods and techniques to facilitate optimal learning. It is crucial to remember that a person with a SpLD may also have a lot of strengths which can sometimes outweigh the weaknesses!

## 6.2 Specific learning disabilities

### 6.2.1 Dyslexia

Dyslexia is a learning disability (or difference) that primarily affects the skills involved in accurate and fluent word reading and spelling. Dyslexia is on a continuum and occurs across a range of intellectual ability. Additional difficulties may be seen in aspects of language, motor

coordination, mental calculation, concentration and personal organization.

Dyslexia is a specific learning disability that affects auditory memory and processing speed which impacts on literacy development, mathematics, memory, organization and sequencing skills to varying degrees. Dyslexia can occur at any level of intellectual development. It is neurological in origin and is seen to run in families.

## **Characteristics of Dyslexia**

A dyslexic person can experience difficulties in many areas, including:

- Formation of letters
- Correctly writing letters of the alphabet in the proper sequence
- Naming the letters
- Associating sound (phonetics) with the symbol (grapheme)
- Appropriate sequence of individual letters, and a series of letters which make up a word, in the reading or writing process (e.g. b-d, was-saw, quiet-quite)
- Reading, spelling, writing
- Finding a word in the dictionary
- Expressing ideas in writing
- Finding the right word when talking
- Expressing clear ideas verbally
- Distinguishing left from right, east from west
- Telling time, days of the week, months of the year
- Confusion with math symbols
- Memorizing multiplication tables (sequential memory)
- Difficulty memorizing non-phonetic words.

## **Identifying learners with dyslexia and other reading or writing difficulties**

Throughout their schooling careers, learners with dyslexia may:

- Appear bright and able, but can't get their thoughts down on paper;
- Have areas in which they do extremely well, particularly in drama, art and debating;
- Be clumsy and may act as the "class clown", often to mask what they see as their academic failure;
- Appear withdrawn and isolated, sit at the back and not participate in class;
- Be able to do one thing at a time very well, but cannot remember an entire list of things;
- Look "distant" when spoken to quickly;
- Go home exhausted at the end of a normal day because they have had to put so much effort into reading and writing;

## Strategies of addressing educational needs of learners with Dyslexia

Here are five strategies you can apply in your classroom:

### Multi-sensory Learning

Multi-sensory activities help learners with dyslexia absorb and process information in a retainable manner and involve using senses like touch and movement alongside sight and hearing. They are not only beneficial for learners with dyslexia but also the rest of the class. Engaging in something different and hands-on excites learners and heightens engagement.

Examples of multi-sensory activities for the classroom include: Writing words and sentences with tactile materials, e.g. glitter glue, sand, pasta, LEGO, or beads. Physical activities to practice spelling, e.g. hopscotch or jump-rope – the children spell out words when they jump to each square or over the rope. Learners work in pairs and take turns to dictate words and spell them.

**Scavenger hunts for letters and words** – split learners into teams and give them a word. Next, write letters onto notes and hide them around the classroom. The teams must find the letters to construct the assigned word and then glue them together on a poster by cutting out the letters

**Assistive technology and tools**

**Pocket spell checkers:** The learner with dyslexia types in a word how they think it's spelled, often phonetically, and the spell checker will return a correctly-spelled match. This helps the learner strengthen their confidence in both writing and spelling and commit correct spellings to memory.

**Line readers:** A line reader magnifies and highlights the portion of text over which it is placed. This helps dyslexic readers move through a book or worksheet and keep their place easier, especially if they experience 'swimming' words: the surrounding sea of text will be less distracting.

**Colored keyboard:** Keyboards with colored overlays and larger letters make typing more accessible to learners with dyslexia. Some come with multimedia hotkeys that enable the user to play, pause, stop, or rewind audio, which is useful as learners with dyslexia often use text-to-speech software when reading and writing.

When purchasing assistive technology for a learners with dyslexia, consider acquiring several for other learners to share.

This will reduce the feelings of isolation or difference the learners with dyslexia may feel and prevents other learners from feeling envious.

## Helpful arrangements

**Use a close procedure:** Give the learners with dyslexia a sheet containing key information that you'll be covering throughout the lesson and blank out key words. The learner can then take notes just like others without the stress of trying to copy everything before it was swiped off the board. This helps them focus and commit key information to memory.

**Give them plenty of time to complete homework:** If a piece of homework takes a day to complete, distribute it on a Friday so that the learner with dyslexia has the whole weekend to work on it. You could also let their parents know what the homework schedule is for the month, so they can start looking at certain topics with their child at home in advance.

**Mark based on effort and ideas:** Learners with dyslexia may be less skilled than their peers at spelling and grammar. However, if their thought process and creativity shine through the errors and it is clear they have made an effort, this should be praised. Highlight any major spelling errors using a green pen – nothing screams “WRONG” more than a teacher’s demotivating red pen!

**Educational games :** The great thing about games designed for learners with dyslexia is that any learner can benefit from them, so you can easily incorporate them into lessons for the whole class. Nothing will excite your learners more than playing games!

**Working with parents :** Meet with parents of learners with dyslexia regularly to discuss how their child is doing and the strategies you have applied in the classroom. The child’s parents can also update you on what methods they have been using at home and what’s been successful.

This is important because, ultimately, no two learners with dyslexia are alike and there is no ‘one-size-fits-all’ approach. By sharing knowledge about ongoing progress, both you and the parents can work together to find learning methods that successfully aid the learning of learner with dyslexia .

### 6.2.2 Dyscalculia

#### Definition

Learners with dyscalculia have difficulties learning the most basic aspect of math skills. It has also been termed “number blindness”. The difficulty is connected with the reception, comprehension, or production of quantitative and spatial information. Learners with dyscalculia may, therefore, have difficulty in understanding simple number concepts and have problems learning number facts and procedures.

Most learners with dyscalculia have cognitive and language abilities that are well within what is considered the “normal” range. They may excel in non-mathematical subjects.

## **Characteristics of dyscalculia include the following:**

- Difficulty working with numbers
- Confused by mathematical symbols
- Difficulty sorting out right from left
- Troubles with recognizing patterns and sequencing numbers
- Difficulty with basic facts (adding, subtracting, multiplying and dividing)
- Often will reverse or transpose numbers (e.g 36: 63)
- Difficulty telling time
- Difficulty with directions (as for a game)
- Difficulty grasping and remembering mathematical concepts
- Poor memory for layout of things (e.g, numbers on a clock)
- Limited strategic planning skills (like those used in chess).
- Using fingers to count out math solutions long after peers have stopped using this method

## **How is dyscalculia diagnosed?**

An awareness of the problem, by either the teacher or parent, brings this disability to light. A child is brought to specialists who, in turn, administer a battery of tests to determine the presence of the disability. A learner with dyscalculia will have average or above average intelligence, but cannot achieve to that degree in the area of mathematics.

## **Methods of addressing learning needs of learners with dyscalculia**

Mathematics is one of the most important aspects of a learner's education. It is part of almost every aspect of life. However, to understand mathematics learners need to learn it, see it and practice it.

- Engage all the senses: Instead of learning in an old-fashioned way, learners with dyscalculia should 'touch mathematics'. Teachers should use a multisensory approach so that learners see, say, hear and touch. This will help them learn faster because they access information through several learning channels.
- Let learners work at their own speed: Do not push them to jump from one mathematical problem to another. Let them take their time to understand the question. Do not expect all learners to work at the same speed.
- Use visual support (e.g. lots of pictures)
- Try to use real objects when, for example, doing subtraction or multiplication.
- Connect mathematical problems with real life situation, so that learners can "visualize" them:
  - Ask a learner to read the mathematical problem aloud.
  - Give them an example of the problem worked out.
  - Keep the numbers lined up correctly.
- Try to simplify the worksheets to minimize the distraction caused by lots of visual information.

The most important thing you can do for a learner with dyscalculia is to never give up. Each child can learn; some just learn differently.

### 6.2.3. Dysgraphia

#### Definition and causes of Dysgraphia

Dysgraphia is a learning disability resulting from the difficulty in expressing thoughts in writing and making graphs. It generally refers to extremely poor handwriting. Dysgraphia is a neurological disorder characterized by writing disabilities. Specifically, the disorder leads to a person's writing to be distorted or incorrect. In learners, the disorder generally emerges when they are first introduced to writing. They make inappropriately sized and spaced letters, or write wrong or misspelled words, despite careful instruction. Learners with the disorder may have other learning disabilities; however, they usually have no social or other academic problems.

Cases of dysgraphia in adults generally occur after some trauma. In addition to poor handwriting, dysgraphia is characterized by wrong or odd spelling, and production of words that are not correct (e.g., using "boy" for "child"). The cause of the disorder is unknown.

#### Methods of addressing needs of learners with dysgraphia

- Encourage learners to outline their thoughts. It is important to get the main ideas down on paper without having to struggle with the details of spelling, punctuation, etc.
- Learners can draw a picture of a thought for each paragraph.
- They can dictate their ideas into a tape recorder and then listen and write them down later.
- Encourage learners to talk aloud as they write. This may provide valuable auditory feedback.
- Allow more time for written tasks, including note-taking, copying, and tests.
- Allow learners to begin projects or assignments early if they will need more time to complete the work.
- Instead of asking a child to write a complete set of notes, provide a partially completed outline so that the learner can fill in the details under major headings (or provide the details and ask the child to write the headings).
- Allow learners to use abbreviations in some writing tasks, such as when taking notes (e.g. using b/c for because). They can develop a list of abbreviations in a notebook, which will be useful for them when doing note-taking in future.
- Reduce the amount of copying learners have to do. For example, in math, provide a worksheet with the problems on, instead of asking learners to copy the problems into their books.
- Separate writing into stages (e.g. brainstorming ideas, drafting, editing, and reading, etc) and teach learners to do the same.
- Encourage learners at primary school level to use paper with raised lines to help them

keep their writing on the line.

- Allow learners to use paper or writing instruments of different colors, and to use the writing instrument that is most comfortable for them.
- Suggest to learners that they could start by writing just one key word or phrase for each paragraph, and then go back later to fill in the details.
- If a learner becomes tired they could try this activity: shake hands fast, but not violently, rub hands together and focus on the feeling of warmth.
- Allow learners to tape record important assignments and/or take oral tests.
- Prioritize certain task components during a complex activity. For example, learners can focus on using descriptive words in one assignment, and in another, focus on using compound sentences.
- Reinforce the positive aspects of a learner's efforts.
- Be patient and encourage learners to be patient with themselves.

#### 6.2.4. Dyspraxia

##### Definition and causes of dyspraxia disability

Learners with dyspraxia are affected by an impairment or immaturity of the organization of movement, often appearing clumsy. Gross and fine motor skills (related to balance, coordination and the manipulation of objects) are hard to learn and difficult to retain and generalize. Writing is therefore particularly difficult and time-consuming.

Computer keyboard skills are also difficult to acquire, as well as playing the flute and many other musical instruments. Pronunciation may also be affected, and people with dyspraxia may be over or under sensitive to noise, light and touch, body posture and position, and misread social cues. In addition, they may share many of the characteristics common to other learners with specific learning difficulties.

Developmental dyspraxia is an immaturity in the way that the brain processes information, which results in messages not being properly or fully transmitted. The term dyspraxia comes from the word praxis, which means "doing, acting". Dyspraxia affects the planning of what to do and how to do it. It is associated with problems of perception, language and thought.

##### Characteristics of dyspraxia by different years of age

###### 0 to 3 years of age

- Symptoms are evident from an early age. Babies are usually irritable from birth and may exhibit significant feeding problems.
- They are slow to achieve expected developmental milestones. For example, by the age of eight months they still may not sit independently.
- Many learners with dyspraxia fail to go through the crawling stages, preferring to "bottom shuffle" and then walk. They usually avoid tasks which require good manual skills.

###### Pre-school learners – 3-5-year-olds

If dyspraxia is not identified, problems can persist and affect the child's life at school. Increasing frustration and lowering of self-esteem can result. Learners with dyspraxia may demonstrate some of these types of behavior:

- Very high levels of motor activity, including feet swinging and tapping when seated, hand-clapping or twisting, and inability to stay still;
- High levels of excitability, with a loud/shrill voice;
- Easily distressed and prone to temper tantrums;
- Constantly bumping into objects and falling over;
- Hands flap when running;
- Difficulty with pedaling a tricycle or similar toy;
- Lack of any sense of danger (jumping from heights, etc);
- Continued messy eating; may prefer to eat with their fingers, frequently spilling drinks;
- Avoidance of constructional toys, such as jigsaws or building blocks;
- Poor fine motor skills; difficulty in holding a pencil or using scissors; drawings may appear immature;
- Lack of imaginative play. May show little interest in dressing up or in playing appropriately in a home corner;
- Limited creative plays;
- Isolation within the peer group; rejected by peers, learners may prefer adult company;
- Laterality (left- or right-handedness) still not established;
- Persistent language difficulties;
- Sensitive to sensory stimulation, including high levels of noise, tactile defensiveness, wearing new clothes;
- Limited response to verbal instruction. May be slow to respond and have problems with comprehension;
- Limited concentration. Tasks are often left unfinished.

### 7-year-olds

Problems may include:

- Difficulties in physical education lessons;
- Difficulties in adapting to a structured school routine;
- Slow at dressing; unable to tie shoe laces;
- Barely legible handwriting;
- Immature drawing and copying skills;
- Limited concentration and poor listening skills;
- Literal use of language;
- Inability to remember more than two or three instructions at once;
- Slow completion of class work;
- Continued high levels of motor activity;

- Hand flapping or clapping when excited
- Tendency to become easily distressed and emotional;
- Problems with coordinating a knife and fork;
- Inability to form relationships with other learners;
- Sleeping difficulties, including wakefulness at night and nightmares
- Reporting of physical symptoms, such as migraine, headaches, feeling sick.

### What causes dyspraxia?

For the majority of those with the condition, there is no known cause. Current research suggests that it is due to an immaturity of neuron development in the brain, rather than to brain damage. People with dyspraxia have no clinical neurological abnormality to explain their condition.

### Other difficulties learners with dyspraxia may present:

#### *Reading and spelling*

Learners with dyspraxia may have difficulties with reading and spelling. Limited concentration and poor listening skills, and literal use of language may have an effect on reading and spelling ability. A learner may read well, but not understand some of the concepts in the language. The learner may also be reluctant to read aloud because of articulation difficulties or because they lack self-confidence. Exercises may be very important for children with reading and spelling difficulties. Computers can also help with reading and spelling.

Research has shown that learners with developmental verbal dyspraxia, whose speech difficulties persist beyond the age of 5-6 years, are at risk of having literacy difficulties. The risk is increased if there is a family history of speech, language or specific learning difficulties.

The learner with developmental verbal dyspraxia has an impaired speech processing system, which affects their ability to make sound and letter links and to carry out phonological awareness tasks (e.g. segmenting, blending, rhyming, etc.) essential for literacy acquisition. Spelling is usually more affected than reading.

#### **Handwriting**

Poor handwriting is one of the most common symptoms of dyspraxia. Learners who have poor handwriting don't need their parents or teachers to tell them about it. Every time they write, they can see that they are not as good as their friends. Learners with dyspraxia should be judged only against their own best efforts. They should be encouraged to progress in a relaxed way.

As the learner progresses through the educational system, the requirement for written work

increases and thus more efforts should be put on developing the fine motor and perceptual skills for effective handwriting.

### Speech and language

Speech may be immature or unintelligible in early years. Language may be impaired or late to develop. For some learners, the primary difficulty is in making and coordinating the precise movements, which are used in the production of spoken language, which results in severe and persistent speech production difficulties. The condition is called developmental verbal dyspraxia: it may occur in isolation or in conjunction with general motor difficulties.

Learners with speech and/or language difficulties should be referred to a speech and language therapist as early as possible. Speech and language therapists carry out assessments, can identify a learner's presenting difficulties and advise on management and support.

### Perception and thought

**Perception:** People who have dyspraxia tend to have poor understanding of the messages that their senses convey and difficulty in relating those messages into actions.

**Thought:** There may be difficulty in planning and organizing thoughts.

### Methods of addressing educational needs of learners with dyspraxia

Dyspraxia	Problems at school	Classroom strategies
Hand-eye coordination	Handwriting difficulties Difficulties with dressing and fastening clothes Using tools, utensils and cutlery	Practice multi-sensory letter formation e.g. sky writing, rice trays Use pencil grips, writing lines, stencils. Suggest loose-fitting, easy-on/easy-off clothing and Velcro fastenings Break down each task into small sections to be mastered one by one
Large muscle movements	Difficulty walking in straight line, bumps into people and things Difficulties running, hopping, jumping, catching/kicking balls	Provide balance or wobble boards, walking on the line and hand-to-hand throwing using bean bags or water-filled balloons

Attention/concentration	Reacts to all stimuli without discrimination Attention span is poor Distracted in open-plan environments  Flits between activities Disturbs others	Allow learner to choose activities which meet s own interests  Avoid disturbing learner when concentrating on task  Make the school light enough, fluttering ceiling displays  Keep wall displays to a minimum Promote a 'no-disturbance' culture showing respect for each child's work space
Conceptualization	Difficulty understanding concepts such as 'in' 'on' 'in front of'	Play farm/zoo/journey games with command cards such as 'cow in front of barn', with correct picture on back of card
Personal organization	Generally poorly organized	Supply time-tables, daily diaries and instructions for specific activities in sequenced picture cards
Communication	Unable to remember and/or follow instructions	Get the attention of the child before giving instructions.  Use simple language with visual prompts. Provide time to process the information. Use activities, demonstrations and pictures.
Speech; language and communication	Difficulty in explaining needs or answering a question Difficulty in retelling an incident.	Provide visual supports to help recollection of personal experiences.  Use closed questions rather than open-ended questions.



### End-of-Unit Assessment

1. Using flash card with types of learning difficulties on one side and on the other,
  - a. Discuss and match corresponding characteristics,
  - b. Discuss and match the corresponding teaching and learning strategies that are also realistic in the Rwandan contexts.
2. The trainer posts two flash cards at different locations in the training room: one with "AGREE" and another with "DISAGREE". The trainer reads one statement and participants are asked to move to one flash card and explain their position.

#### Statements:

- a. People with dyslexia cannot succeed in life.
- b. Dyslexia cannot be diagnosed until a child is in Primary
- c. Repeating a school grade can remove dyslexia.
- d. Dyslexia is caused by parents who do not read to their learners

# UNIT 7

## TEACHING LEARNERS WITH COMMUNICATION DIFFICULTIES



### Learning objectives

By the end of this unit, trainees should be able to:

- Identify learners with communication difficulties.
- Explain causes of communication difficulties.
- Apply appropriate teaching strategies to address learning needs of learners with communication difficulties.
- Demonstrate positive attitudes towards learners with communication difficulties.



### Introductory Activity

#### *Case study: Izere*

Izere is an 8 year old P3 learner who has a communication difficulty. She has trouble with articulation and distinguishing of “s” and “z”, “sh” and “j”. Izere’s hearing is in the normal range but has language problems such as trouble forming plural and past tenses and using pronouns. Izere speaks in very simple sentences and has a limited vocabulary, but has normal intelligence scores. Izere began getting speech and language support services through a pull-out program and her articulation improved greatly. However, she began missing a large amount of time in class and her reading comprehension and social skills suffered. In order to address these problems, Izere is now getting support from teachers in ordinary classroom/ school.

#### Tasks

1. Discuss difficulties that Izere is facing in her education?
2. Comment on the strategies adopted to address Izere’s difficulties
3. Share feasible strategies in accommodating learners with communication difficulties in your schools.



### Content Summary

## 7.1. Definition of communication difficulties

A communication difficulty is impairment in the ability to receive, send, process, and comprehend concepts or verbal, nonverbal and graphic symbol systems. A communication difficulty may be evident in the processes of hearing, language, and/or speech. A communication difficulty may range in severity from mild to profound. It may be developmental or acquired.

Individuals may demonstrate one or any combination of communication difficulty. A communication difficulty may result in a primary disability or it may be secondary to other disabilities.

## 7.2 Causes of communication difficulty

The causes of communication difficulty are numerous. They may originate in the nervous system, the muscular system, or in the formation of the speech mechanism. They may include prenatal injury, tumors, and problems with the nervous or muscular systems, the brain, or the speech mechanism itself. Exposure to teratogens, including X-rays, viruses, drugs, and environmental toxins, can also cause congenital disorders.

Environmental factors can cause poor language development. Some young learners have insufficient stimulation from peers or adults, limiting the opportunities they have to learn through social interactions. Others have inadequate or inappropriate adult role models from whom to learn, delaying their mental and language development. Without early intervention, some learners with delayed language development are at risk for developing and maintaining language disorders.

## 7.3. Characteristics of communication difficulties

Learners with language difficulties frequently struggle in the classroom as well as at home and in other community setting. Some of the difficulties you may observe in learners with expressive language disorders include:

- Limited vocabulary;
- Incorrect grammar or syntax;
- Excessive repetition of information and difficulty in formulating questions; Difficulties in following oral directions;
- Poor understanding humor;
- Difficulties comprehending complex sentences
- Failure to respond to questions appropriately'
- Trouble forming sounds (called articulation or phonological disorders)
- Difficulties with the pitch, volume, or quality of the voice
- Omitting or substituting sounds when pronouncing words,
- Having trouble getting others to understand what they are trying to say
- Having trouble with the way their voice sounds;
- Failure to use appropriate speaking volume (too loud or too soft)
- Having abnormal rhythm or rate of speech
- Frequently prolongs or repeats sounds, words, phrases and/or sentences during speech

## 7.4 Types of communication difficulties

### 7.4.1. Categories of communication difficulties based on impairments in speech sound articulation, fluency, and voice

A speech disorder is an impairment of the articulation of speech sounds, fluency and/or voice. It has three types:

- **An articulation disorder** is the atypical production of speech sounds characterized by substitutions, omissions, additions or distortions that may interfere with intelligibility.
- **A fluency disorder** is an interruption in the flow of speaking characterized by atypical rate, rhythm, and repetitions in sounds, syllables, words, and phrases. This may be accompanied by excessive tension, struggle behavior, and secondary mannerisms.
- **A voice disorder** is characterized by the abnormal production and/or absences of vocal quality, pitch, loudness, resonance, and/or duration, which is inappropriate for an individual's age and/or sex.

### 7.4.2. Types of communication difficulties according to their causes

Researchers have divided the types of communication disorders into two classifications relating to their cause:

- **Organic disorders**, those caused by an identifiable problem in the neuromuscular mechanism of the person, and
- **Functional disorders**, those with no identifiable organic or neurological cause. Sometimes, communication difficulties are both functional and organic. For example, a learner with cerebral palsy may have poor speech, caused by an organic neuromuscular problem. Additionally, the learner may have difficulty using language- based skills such as plurals as well as putting words in sentences in the correct order. Because no apparent cause for this learner's language delays exists, the cause of the language delay is functional, whereas the cause of the speech disorder is organic. Communication difficulties can be classified further according to when the problem began. Learners can be born with a problem causing a disorder, such as a child who is born with cleft palate, cerebral palsy, autism, brain damage, mental retardation, hearing loss, or deafness.

## 7.5. Strategies of addressing needs of learners with communication difficulties

Strategies to address needs of learners with difficulties in communication, speech and language provide:

- Instructions in short, simple sentences and ask the learners to repeat them
- Tasks broken into small steps and repeat instructions if necessary
- Time for the learners to respond to questions or follow instructions
- Reinforcement of spoken language with use of pictures, real objects, role play, gestures, facial expressions, text, songs etc.
- Regular practice in listening to stories and retelling what happened
- Regular practice in predicting what will happen next in a story
- Opportunities for role play – at the doctors, market, and school (can be extended for older learners to include specific instances, e.g. explaining an incident to teacher, negotiating with older/younger sibling, persuading parent to allow for something learner wants, etc.)

- Practice in listening comprehension
- Practice in describing events that have happened
- Practice in describing familiar objects
- Practice in following verbal and written instructions
- Practice in giving instructions
- Practice reading aloud individually, in pairs or small groups
- Practice in sequencing – ordering pictures to tell a story, ordering sentences to tell a story
- Key words, prompts and reminders to guide discussion and/or writing
- Plenty of opportunities to practise speaking and elaborate ideas in small group or one to one,
- Ways of avoiding learners being put in position where there is a need for an immediate response or interaction in front of a large group

## 7.6. Strategies for teaching learners whose communication impact their social interaction

Learners experiencing difficulties with social interaction may be teased and experience rejection by other learners. Interventions may be required to prevent this happening. It will take time and effort to develop a strong, supportive relationship with the learner, but it is important that he/she feels in a safe environment where he/she can experience success. Provide (within the regular lesson if possible):

- Plenty of praise and encouragement, especially when the learner is demonstrating appropriate behavior;
- Ignore inappropriate behavior and explain to the other learners that they should do the same
- Support for the learner to respond and contribute wherever possible
- Opportunities for the learner to work with others for short spells but also give time in
- Clear limits and restrictions as to what can/cannot be done
- Opportunities for the learner to share or demonstrate to others any special interests or skills
- Plenty of opportunities to practice listening and speaking skills
- Games to encourage development of social skills
- Games to develop recognition of facial expressions and emotions.



### End-of-Unit Assessment

1. You are at the beginning of a school year and you have new learners. Discuss why and how educators have to identify learners with communication difficulties.
2. Discuss challenges faced by learners with communication difficulties in the teaching and learning processes.
3. Discuss what a teacher can do to help learners with communication difficulties.

# UNIT 8

## TEACHING GIFTED, GENIUS AND TALENTED LEARNERS



### Learning objectives

By the end of this unit, trainees should be able to:

- Identify gifted, genius and talented learners.
- Apply appropriate teaching and learning methods to address the learning needs of gifted, genius and talented learners.
- Demonstrate positive attitudes towards gifted, genius and talented learners.



### Introductory Activity

#### Case study: Ishimwe

Ishimwe is a 10 years old girl, intense, inquisitive, energetic, and imaginative P4 learner. She excels in school and enjoys finding solutions to problems independently. She loves science and enjoys researching topics and abstract tasks, especially in Sciences and Mathematics. She dislikes routine mathematics and may make careless computation errors, but she is always above average in her standardized mathematics tests. Socially, Ishimwe has very few close friends though generally tolerated by her peers.

#### Tasks:

1. In small groups discuss the learning problems of Ishimwe
2. As a teacher, which pedagogical strategies can you apply to help Ishimwe overcome those problems?



### Content Summary

## 8.1. Definitions of gifted, genius and talented learners

- Gifted learners are those who have superior general ability in academic performance.
- Genius learners excel in almost all academic domains and with less effort.
- Talented learners are those who show signs of special aptitude or ability in specific areas of the arts, sciences, business, etc.

## 8.2. Characteristics of gifted, genius and talented learners

- Learn new material faster, and at an earlier age, than age peers;
- Always remember what has been learned without making revision;
- Is able to deal with concepts that are too complex and abstract for age peers;
- Has a passionate interest in one or more topics, and would spend all available time

- learning more about them if possible;
- Does not need to look at the teacher to hear what is being said;
- Can operate on multiple brain channels simultaneously and process more than one task at a time.

## 8.3. Categories of gifted and talented learners

There are several categories we can use to identify and better understand the different kinds of learners who are gifted and talented. These are:

### **Learners who are gifted**

Within the school setting, these learners enjoy school and go through curriculum with few problems. They also do very well as they continue with their education at institutions of higher learning.

These gifted learners are bright and show a high level of intelligence. They are able to deal with facts and their relationships. They may be good in one area like language or mathematics or sciences. On the other hand, they may also excel in all academic areas. Many of them may also show some degree of leadership ability.

### **Learners who are talented**

You should also realize that giftedness could include many more kinds of talents and abilities in addition to good school performance. For example, some learners do exceptionally well in music, the fine arts, mechanics, dancing, singing, athletics or sports. These specific abilities are called talents. These skills may not necessarily be matched by academic achievement, but since they are far above those of other learners in the same age group, they call for special consideration.

### **Children who are highly motivated**

In addition to natural, above-average intellectual ability and creativity, parents, teachers and all persons interested in the identification of gifted and talent children should consider their level of motivation. This is called “task commitment”. Children who are highly motivated may achieve much with only just above-average intelligence or talent.

### **Children who are creative**

Creative learners have unusually high levels of originality and/or the ability to restructure the world in unusual forms. For example, somebody might have come up with a certain design. Another one modifies it so that, despite using the same materials and measurements, the final design comes out very differently.

## 8.4. Problems faced by learners who are gifted and talented

Due to their high intelligence, these learners do not fit well with their peer groups. They may be unable to develop positive interpersonal relationships and become withdrawn or loners. Some teachers find that too challenging and often misinterpret their behavior.

Learners who are gifted and talented may also engage in disruptive behavior in class. This may be because the learner finds class work and other activities meant for their age group too easy. He/she will therefore finish the assigned task within a short time and due to boredom and frustration, may engage in disrupting classroom activities. Such learners may also find themselves too dominate in group or class.

## 8.5. Strategies of accommodating gifted, genius and talented learners

Learners who are gifted and talented are just like any other. They have basic needs like other learners and the teacher needs to be tolerant, loving, understanding, and flexible. Also the teacher needs to remember that those learners are creative, competent, have broad range of interests and skills, and ready to learn. To help the child who is gifted and talented, the teacher therefore needs to:

- Recognize and accept the learner's special abilities
- Encourage the child to explore his fields of interests
- Help the learner to develop or enrich his social confidence
- Avoid imposing expectations and demands that are beyond the learner's level of ability
- Avoid having negative attitudes towards the learner
- Positively reinforce learners with SEN

The following were proposed for gifted, genius and talented learners. The learners need to be challenged:

- To operate mentally and effectively at a complex level of thought and feeling Through opportunities of production
- By discussions among intellectual peers
- Through work that demonstrates process/product outcomes
- By experiences which promote understanding of human value systems By the opportunity to see inter-relationships in all bodies of knowledge By a special course that accelerates pace and depth
- By tying abilities to real problems
- Be taught critical thinking, creative thinking, research, problem solving, coping with exceptionality, decision making and leadership.



### End-of-Unit Assessment

In groups, choose a lesson in a subject and grade of your preference, and prepare a lesson and assessment questions that include gifted, genius and talented learners.

# UNIT 9

## TEACHING LEARNERS WITH EMOTIONAL AND BEHAVIOURAL DISORDERS (EBD)



### Learning objectives

By the end of this unit, trainees should be able to:

- Identify learners with emotional and behavioral disorders.
- Explain the causes of learners with emotional and behavioral disorders.
- Apply suitable teaching methods, techniques and strategies to address learning needs of learners with emotional and behavioral difficulties.
- Demonstrate positive attitudes towards learners with emotional and behavioral Difficulties.



### Introductory Activity

In small groups, trainees share experiences on the cases of learners with emotional and behavioral disorders they have in their respective schools. Focus on their characteristics and strategies to support such cases.



### Content Summary

#### 9.1. Definition of emotional and behavioral disorders

Emotional and behavioral disorder (EBD) is a broad term used commonly in educational settings, to group a range of more specific difficulties experienced by learners and adolescents. Both the general definitions and the concrete diagnosis of EBD may be controversial, as the observed behavior may depend on many factors. Behavioral disorders, also known as conduct disorders, are one of the most common forms of psychopathology among learners and young adults, and are the most frequently cited reason for referral to mental health services. In Rwanda, these services are available. As a result, their presence severely constrains the ability of school systems to educate learners effectively. The prevalence of behavioral problems among learners and young adults is substantial.

## 9.2. Characteristics of learners with emotional and behavioral disorders

Behavioral disorders become apparent when the child displays a repetitive and persistent pattern of behavior that results in significant disruption of others in the class. Such disturbances may cause significant impairments in academic, social, and/or occupational functioning. Such a behavior pattern is consistent throughout the individual's life.

The characteristics of behavioral disorders among learners and adolescents are:

- Initiation of aggressive behavior and reacting aggressively towards others
- Display of bullying, threatening, or intimidating behavior
- Being physically abusive towards others
- Deliberate destruction of others' property
- Showing little empathy and concern for the feelings, wishes, and well-being of others
- Showing callous behavior towards others and lack of feelings of guilt or remorse
- Informing on companions and/or tending to blame others for their own misdeeds.

Learners who have emotional and behavioral disturbances exhibit significant behavioral excesses or deficits. These terms refer to patterns of behavior that depart significantly from the expectations of others. In recent years, "behavioral disorders" has gained favor over "emotional disturbance" as a more accurate label, meaning cases of learners that deviate from normal and acceptable behaviors.

Serious Emotional Disturbance (SED) refers to a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance: an inability to learn which cannot be explained by intellectual, sensory, or health factors. In other words, it is an inability to build or maintain satisfactory interpersonal relationships with peers and teachers. This is expressed by inappropriate types of behavior or feelings under normal circumstances, a general pervasive mood of unhappiness or depression, a tendency to develop physical symptoms or fears associated with personal or school problems.

## 9.3. Types of EBD

There is considerable agreement about general patterns or types of disordered behavior. Two discrete patterns are suggested:

- Externalizers (aggressive, disruptive, acting out)
- Internalizers (withdrawn, anxious, depressed).

The following EBD dimensions are identified:

- Conduct disorders (aggression, disobedience, irritability)
- Personality disorders (withdrawal, anxiety, physical complaints)
- Immaturity (passivity, poor coping, preference for younger playmates)
- Socialized delinquency (involvement in gang subcultures).

## 9.4. Strategies for supporting learners with Emotional and Behavioral Disorders (EBD)

Often learners with EBD may have other disabilities such as autism and attention deficit hyperactivity disorder. When supporting learners with EBD, consider the following advice:

- Routine: Provide a structured routine with a visual time clock.
- Changes in routine: Convey any changes of routine to learners as soon as available.
- Bring to the learner's attention any role models who had a similar disorder to their own. Point out that these individuals got ahead by a combination of effort and by asking for help when needed.
- Expose learners with behavioural disorders to other learners who demonstrate appropriate behaviours.
- Ask previous teachers about interactive techniques that have been effective with the learner in the past.
- Direct instruction or target behaviour is often required to help learners master them.
- Instructions should be simple and very structured
- Enforce classroom rules consistently.
- Make sure the discipline fits the 'crime', without harshness.
- Have pre-established consequences for misbehaviour. Administer consequences immediately, and then monitor proper behaviour frequently.
- Calm spot: Have a designated area of the classroom where learners go to calm down. This spot can be used proactively to prevent behaviours.
- Determine whether the learner is on medication, what the schedule is, and what the medication effects may be on his or her in class demeanour with and without medication.
- This is applicable since every Rwandan citizen has health insurance and parents are mobilized to send their learners to health centres.
- Use time-out sessions to cool off disruptive behaviour and as a break if the learner needs one for a disability-related reason.
- Small flexible grouping: Learners with EBD may have difficulty establishing relationships with peers. Smaller groups decrease distractions and learner-to- teacher ratio.
- Group participation in activities is highly desirable because it makes social contacts possible.
- In group activities, acknowledge the contributions of the learner with a behavioural disorder.
- Provide encouragement. Reward more than you punish, in order to build self- esteem. Praise immediately all good behaviour and performance.
- Special efforts should be made to encourage and easily facilitate learners with behavioural disorders to interact.
- Change rewards if they are not effective for motivating behavioural change.
- Develop a schedule for applying positive reinforcement in all educational environments
- Devise a contingency plan with the learner in which inappropriate forms of response are replaced by appropriate ones.
- Treat the learner with the be havioural disorder as an individual who is deserving of respect and consideration.
- Monitor the learner's self-esteem. Assist in modification, as needed.

- Self-esteem and interpersonal skills are especially essential for all learners with emotional disorders.
- When appropriate, seek input from the learner about their strengths, weaknesses and goals.
- Encourage others to be friendly with learners who have emotional disorders.
- Do not expect learners with behavioural disorders to have immediate success; work for improvement on an overall basis.
- As a teacher, you should be patient, sensitive, a good listener, fair and consistent in your treatment of learners with behavioural disorders.
- As an educator you serve as a model for the learners who are behaviourally disturbed. Your actions therefore, must be consistent, mature, and controlled. Behavioural outbursts and/or angry shouting at learners inhibit rather than enhance a classroom.
- Present a high degree of possessiveness in the classroom environment.
- Check on the learner's basic capacity to communicate and adjust your communications efforts accordingly.
- Use a wide variety of instructional equipment which can be displayed for the learners to look at and handle.
- You should refer the learners to visual aids and reading materials that may be used to learn more about the techniques of skill performance
- Monitor the learner carefully to ensure that learners without disabilities do not dominate the activity or detract in any way from the successful performance of the learner with the behavioural disorder.
- Put an individual with a behavioural disorder in charge of an activity; this can often reduce aggressiveness.
- The environment must be structured, but sensitive to the needs of learners with behavioural disorders.
- Devise a structured behavioural management program.
- Consultation with other specialists, including teacher having skills in special education, psychologists, and others may prove helpful in devising effective strategies
- Let your learners know the expectations you have, the objectives that have been established for the activity, and the help you will give them in achieving objectives.
- Remain calm, explain which rule has been broken, and avoid debating or arguing with the learner with a behavioural disorder.
- It is advised to use instructional strategies involving self-control, self-reinforcement, self-monitoring, self-management, problem-solving, cognitive behaviour modification, and metacognitive skills should be focused on teaching learners reading skills.
- Target behaviours: After assessing and taking data on learners' observable behaviour, determine which behaviour or behaviours to direct attention at.



### End-of-Unit Assessment

1. Discuss and/or describe briefly how you can support learners with EBD in your school.
2. Design a role-play on different emotional and behavioural disorders.

# UNIT 10

## TEACHING LEARNERS WITH AUTISM AND HYPERACTIVITY



### Learning objectives

By the end of this unit, trainees should be able to:

- Define autism and hyperactivity.
- Explain the causes of autism and hyperactivity.
- Identify learners with autism and hyperactivity.
- Explain the effect of autism and hyperactivity on learners' development and learning.
- Apply appropriate teaching methods, techniques and strategies to address educational needs of learners with autism and hyperactivity.
- Demonstrate positive attitudes towards learners with autism and hyperactivity.



### Introductory Activity

In your groups, brainstorm on autism and hyperactivity and then discuss how you recognize learners with autism and hyperactivity in your class and how to support them in their learning process.



### Content Summary

## 10.1 Autism

### Definition

Autism is a condition generally regarded as being in the most severe group of developmental disorders. It is a neurological disorder characterized by extreme withdrawal from the public. Autism onset is between 0-5 years, and is three times more likely to affect males than females. This gender difference is not unique to autism, since much developmental impairments have a greater male to female ratio.

Most learners with autism may be 'normal' in appearance, but spend their time engaged in puzzling and disturbing behaviors which are markedly different from others. Less severe cases may be diagnosed with Pervasive Developmental Disorder (PDD) or with Asperger's Syndrome. These learners typically have normal speech, but have many "autistic" social and behavioral problems.

Many infants with autism are different from birth. Two common characteristics they may exhibit include arching their back away from their caregiver to avoid physical contact, and failing to anticipate being picked up (i.e., becoming limp). As infants, they are often described as either passive or overly agitated babies. A passive baby refers to one who is quiet most of the time making little, if any, demands on his/her parents. An overly agitated baby refers to an infant who cries a great deal, sometimes non-stop, during his/her waking hours. During infancy, many begin to rock and/or bang their head against the crib; but this is not always the case.

In the first few years of life, some toddlers with autism reach developmental milestones, such as talking, crawling, and walking, much earlier than the average child; whereas others are delayed. Approximately, one-half of children with autism develop normally until somewhere between 1.5– and 3 years of age; then autistic symptoms begin to emerge.

The age of the child when the first intervention is made has a direct impact on the outcome. Typically, the earlier a learner's needs are addressed, the better the prognosis will be. In recent years there has been a marked increase in the percentage of learners who can attend regular schools and live semi-independently in community settings. However, the majority of people with autism remain impaired in their ability to communicate and socialize.

One characteristic which is quite common in autism is the individual's 'insistence on sameness'. Many learners become overly insistent on routines and may become very upset if the routine changes, even slightly. Some common examples are: drinking and/or eating the same food items at every meal, wearing certain clothing or insisting that others wear the same clothes, and going to school using the same route.

### **Causes of autism**

Although there is no known unique cause of autism, there is growing evidence that it can be caused by a variety of problems. There is some indication of a genetic influence in autism. For example, there is a greater likelihood that monozygotic twins (i.e., identical twins) will both have autism than dizygotic twins (i.e., fraternal twins). Monozygotic twins have a 100% overlap in genes; whereas dizygotic twins have a 50% overlap, the same as in non-twin siblings.

A great deal of research has focused on locating the 'autism gene'. However, many researchers think that three to five genes will likely be associated with autism. There is also evidence that the genetic link to autism may be a weakened or compromised immune system.

### **Characteristics of autism**

- Restlessness
- Severe communication problems
- Disturbed language development
- Withdrawal (isolation)

- Echolalia (repetition)
- Behavior and mannerism problems
- Self-mutilation behavior (biting, nodding, etc.) causing injury to themselves
- Lack of daily living skills.

### Methods of supporting learners with autism

- Use Task Analysis – very specific, tasks in sequential order.
- Always keep your language simple and concrete. Get your point across in as few words as possible. Typically, it is far more effective to say “Pens down, close your journal and line up to go outside” than “It looks so nice outside. Let us do our science lesson now. As soon as you’ve finished your writing, close your books and line up at the door. We are going to study plants outdoors today”.
- Teach specific social rules/skills, such as turn-taking and social distance.
- Give fewer choices. If a learner is asked to pick a color, say red, only give him two to three choices to pick from. The more choices, the more confused an autistic child will become.
- If you ask a question or give an instruction and are greeted with a blank stare, reword your sentence. Asking a learner what you just said helps clarify that you’ve been understood.
- Avoid using sarcasm. If a learner accidentally knocks all your papers on the floor and you say “Great!” you will be taken literally and this action might be repeated on a regular basis.
- Avoid using idioms. “Put your thinking caps on”, “Open your ears” and “Zipper your lips” will leave a learner completely mystified and wondering how to do that.
- Give very clear choices and try not to leave choices open ended. You are bound to get a better result by asking “Do you want to read or draw?” than by asking “What do you want to do now?”
- Repeat instructions and checking understanding. Using short sentences to ensure clarity of instructions.
- Providing a very clear structure and set a daily routine including time for play.
- Teaching what “finished” means and helping the student to identify when something has finished and something different has started. Take a photo of what you want the finished product to look like and show the student. If you want the room cleaned up, take a picture of how you want it to look some time when it is clean. The learner can use this for a reference.
- Providing warning of any impending change of routine, or switch of activity.
- Addressing the learner individually at all times (for example, the learner may not realize that an instruction given to the whole class also includes him/her. Calling the learner’s name and saying “I need you to listen to this as this is something for you to do” can sometimes work; other times the learner will need to be addressed individually).
- Using various means of presentation – visual, physical guidance, peer modeling, etc. Recognizing that some change in manner or behavior may reflect anxiety (which may be triggered by a [minor] change to routine).
- Not taking apparently rude or aggressive behavior personally; and recognizing that the

target for the learner's anger may be unrelated to the source of that anger.

- Avoid over stimulation. Minimizing/removal of distractors, or providing access to an individual work area or booth, when a task involving concentration is set. Colorful wall displays can be distracting for some learners, others may find noise very difficult to cope with.
- Seeking to link work to the learner's particular interest
- Exploring word-processing, and computer-based learning for literacy.
- Protecting the learner from teasing at free times, and providing peers with some awareness of his/her particular needs.
- Allowing the learner to avoid certain activities (such as sports and games) which s/he may not understand or like; and supporting the learner in open-ended and group tasks.
- Allowing some access to obsessive behavior as a reward for positive efforts

## 10.2. Hyperactivity

### Definition

Hyperactivity can be described as a physical state in which a person is abnormally and easily excited or exuberant. Strong emotional reactions, impulsive behavior and sometimes a short span of attention are also typical for a hyperactive person. When hyperactivity starts to become a problem for the person or others, it may be classified as a medical disorder.

### Causes of hyperactivity

- Attention-Deficit Hyperactive Disorder
- Puberty (Fluctuating hormone levels can lead to mood swings, impulsiveness and trouble concentrating for growing teenagers)
- Boredom (activity of the brain is too low in the front)
- Mental conflicts
- Problems at home, which may include sexual abuse
- Hearing and visual problems
- Overactive thyroid
- Lead poisoning
- Anxiety
- Atypical depression
- Sleep depression
- A range of psychiatric illnesses
- Mania
- Effect on children
- Learning disability
- Difficulty in paying attention in the class
- Children exhibit behavior problems unusual for their age and level of intelligence.

## **Characteristics of a learner with hyperactivity**

- Seems unable to sit still or to stay seated when expected to
- Appears restless and fidgety
- Bounces from one activity to the next
- Tries to do more than one thing at a go
- Exhibits various characteristics that can be bothersome to teachers, other children and themselves
- Runs around or excessively climbs over things
- Makes unduly noisy when playing
- Has difficulty engaging in quiet leisure activities
- Fidgets with hands, feet or squirms on the seat
- Shouts out answers before the questions have been completed
- Fails to wait in line, or to take turns in games or group situations
- Interrupts or intrudes on others
- Talks excessively without appropriate response to social restraints
- Has attention difficulties and hyperactivity are pervasive across all their activities
- Exhibits the above behavior problems or difficulties both at home and at school.

## **Methods, techniques and strategies to support learners with hyperactivity**

Early intensive sustained special educational programs and behaviour therapy can decrease the symptoms and severity of hyperactivity and help children to control their behaviour. Educational approaches include:

### **Applied behaviour analysis**

The teacher identifies the inappropriate behaviour of the learner, sets the goal to eliminate the problem behaviour to replace it with more appropriate behaviour.

### **Advice:**

Work with the learner to cooperatively identify appropriate goals such as completing homework assignments on time, obeying school safety rules on the school playground;

Each effort made by the learner to improve his behaviour can be reinforced by a tangible reward such as stickers of happy faces or extra time on the computer or playing a favourite game with the teacher.

### **Developmental models**

Assign the learner a seat near a role model peer. This sitting arrangement provides opportunity for learners to work cooperatively and to learn from their peers in the class.

## **Structured teaching**

Teachers can use special instructional tools to modify classroom learning such as charts with attractive colours, blocks with different shapes and variety of games to suit the special needs of the learner. Learning activities should be planned according to the needs of the learner.

## **Social skill therapy**

Learners should be taught social skills using structured class. For example teachers can ask learners to role play different solutions to common social problems.

## **Placement in classroom**

A learner with hyperactivity can be assigned a seat in front of the class or near the teacher for easy monitoring.

## **Curriculum**

The curriculum should be modified to suit the needs and abilities of the learner. Lessons should not be too long and should not be difficult for the learner to understand.

## **Teaching methods and educational materials**

Teaching methods should be modified according to the needs and abilities of the learner. Educational materials should be educative, durable, attractive and easy to handle when in use

## **Speech and language therapy**

Learners should be involved in oral activities like debate, music, reading loudly, role play and indoor games to develop more vocabulary and expression of speech.

The above approaches when applied at an early age in pre-schools can demonstrate effectiveness in enhancing global functioning and improving intellectual performance of young children.



### **End-of-Unit Assessment**

1. Discuss how a teacher can identify learners with autism and hyper-activity in her/his class.
2. Discuss the typical behaviours that learners with autism and hyperactivity manifest at school.
3. Propose ways a teacher may use to help learners to benefit from her/his teaching.

## Chapter 4:

# Developing Accessible Teaching and Learning Materials

### Introduction

This chapter explains the techniques for developing accessible teaching and learning materials in special needs education and creates awareness among teachers who want to know more about how to cater for learners with visual difficulties, hearing difficulties, learning disabilities, physical disability, etc. It is structured into two units: Unit one is about educational resources to promote learning in an inclusive setting, while Unit two consists of making and managing educational resources.

# UNIT 1

## EDUCATIONAL RESOURCES TO PROMOTE LEARNING IN AN INCLUSIVE SETTING



### Learning objectives

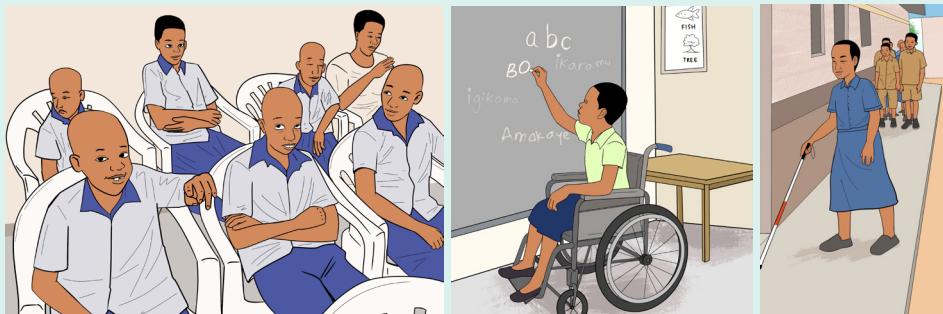
By the end of this unit, trainees should be able to:

- Identify the educational needs of learners in an inclusive setting.
- Differentiate the teaching and learning materials related to different categories of learners which are locally made.



### Introductory Activity

In groups, ask trainees to analyze the photographs shown and then do the task below:



#### Task:

- Analyze the photographs above and identify the type of special educational needs they present in each photo.
- Suppose that those are learners among others in your class. Which learning materials will be used to accommodate and teach the learners?
- What materials are you able to make by yourself and what other materials need to be purchased?

After the trainees have presented their findings, use questions and answers to present the content below. For each type of disabilities, let learners observe and manipulate the materials which will be used to teach these learners.

**Activity 2** Name the educational resources you would consider : when teaching learners with Visual difficulties in an inclusive educational setting.

**Activity 3:** Which assistive technologies are used by learners with Visual difficulties?

**Activity 4:** What type of educational resources will you consider when teaching learners with hearing difficulties in an inclusive setting? Discuss your answers with a colleague.



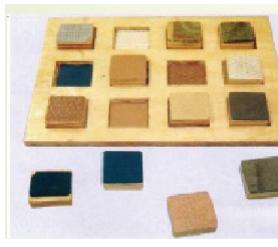
## 1.1 Visual difficulties

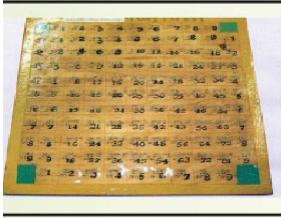
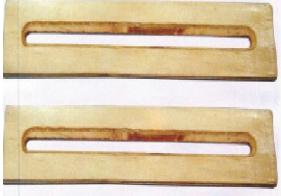
Learners with Visual difficulties can learn together with sighted peers. To achieve this, teachers can apply the same educational principles, with appropriate modifications to accommodate the learners with special needs. This is mainly because learners with Visual Difficulties rely on other alternative senses to acquire and transmit information. Hence, learners with low vision or with total loss of vision (blind) may require use of the following:

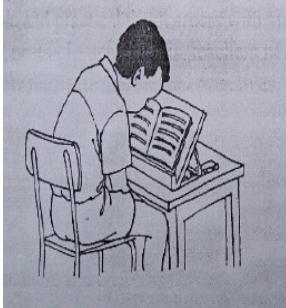
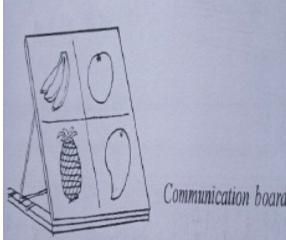
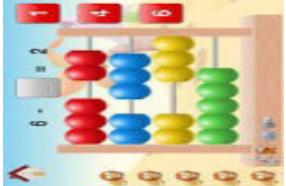
- Braille and tactile materials
- Magnifying devices
- Screen reader software and hardware
- Mobility and orientation skills

### Teaching and learning materials

#### a. Some of the locally made materials for learners with visual difficulties

Nº	Name	Picture	Description	Uses
1	Feel box		This box is made of plywood (wood) that consists of several lids. Every lid covers a hole that has a different texture. The lids (covers) measure 130mm x 130mm	<ul style="list-style-type: none"><li>• Recognition of various textures;</li><li>• Raising finger dexterity in readiness for Braille reading.</li></ul>
2	Tactile board and matching blocks		This board with four different textured blocks to be matched to the recessed textures on the board. The board measures 260mm x 200mm.	<ul style="list-style-type: none"><li>• Developing tactile perception.</li><li>• Avoiding distraction in the absence of touch.</li><li>• Matching different textures.</li></ul>
3	Single cell peg board		This is a wooden board measuring 90mm x 70mm x 20mm with a braille cell. Small sticks (dowels 50 x 2.0 mm) are used as pegs (small stick).	<ul style="list-style-type: none"><li>• Enforcing hand coordination through inserting small pegs.</li><li>• Training Braille letters recognition in preparation for reading and writing.</li></ul>

Nº	Name	Picture	Description	Uses
4	Numeral cell peg board		This is a wooden block with six holes used to represent a Braille cell. Small dowels are used as pegs. The size can be 35 x 50 x 20mm.	<ul style="list-style-type: none"> <li>Enforce hand coordination through inserting pegs.</li> <li>Teach letters of the alphabet in braille and numbers recognition in preparation for reading and writing.</li> <li>Reinforcing multiplication of single digit numbers by a single digit numbers.</li> </ul>
5	Braille multiplication chart		This is a plywood board divided into 121 squares. Numbers 1–9 are written in print and braille. Each square of the product corresponds to the numbers indicated at the margins.	<ul style="list-style-type: none"> <li>Multiplication of single digit numbers.</li> </ul>
6	Typoscope		This is a wooden frame measuring 212 x 35mm. It has an open line at the centre long enough for at least a single line to be read.	<ul style="list-style-type: none"> <li>Help the learner with low vision to focus on a line of print for reading.</li> <li>Help to improve reading ability of the learner with low vision.</li> <li>Enhance fixation.</li> <li>Enhance hand coordination.</li> </ul>
7	Long cane		This is made from aluminum pipe with a reflecting tape. It has a rubber handle and a hard nylon tip. A light piece of wood can also be used as an alternative. The size is measured as from the floor to the base of the breastbone of the user.	<ul style="list-style-type: none"> <li>Ease movement of persons with visual impairment within the environment;</li> <li>Encourage movement and safety to the person with visual impairment;</li> <li>Facilitate independent movement for a person who is blind.</li> </ul>

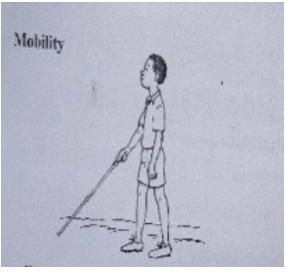
Nº	Name	Picture	Description	Uses
8	Large print		Large print refers to the formatting of a book or other text document in which the font is considerably larger than usual, to accommodate people who have low vision.	<ul style="list-style-type: none"> <li>Facilitate easy reading</li> </ul>
9	Communication boards		<p>A communication board is a board with symbols or pictures that is used to facilitate communication for lower vision impairment.</p> <p>Learners communicate using the board by pointing at the various symbols and pictures following teacher's instructions</p>	<ul style="list-style-type: none"> <li>Can be used to assist learners with low vision</li> </ul>
10	An abacus		Made of wood or plastic having a frame that holds rods with freely-sliding colored beads mounted on them	<ul style="list-style-type: none"> <li>Used to help learners with visual difficulties compute numbers</li> <li>Can be used to assist learners with low vision</li> </ul>

### b. Some of the materials manufactured for learners with visual difficulties

Learners who do not learn efficiently through their visual senses may access the academic curriculum through Braille, a tactile method of reading. Like the print alphabet, it is a code-a way of presenting spoken language in written form.

#### Braille transcription for learners with visual difficulties

Braille																																																									
<b>Cell</b>  Each Braille character or (cell) is made up of 6 dot positions, arranged in a vertical rectangle of 2 columns of 3 dots each.	Braille is a method of reading by touch that is used by blind and partially sighted people around the world.																																																								
<ul style="list-style-type: none"> <li>The dots are raised in one of the 64 possible combinations and each combination represents a different letter or sound.</li> <li>The character that each combination represents varies somewhat between languages, but the dot height, cell size and cell spacing are always uniform.</li> </ul>	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td></tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>O</td><td>P</td><td>Q</td><td>R</td><td>S</td><td>T</td><td>U</td></tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>V</td><td>W</td><td>X</td><td>Y</td><td>Z</td><td></td><td></td></tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	A	B	C	D	E	F	G								H	I	J	K	L	M	N								O	P	Q	R	S	T	U								V	W	X	Y	Z									
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Nº	Name	Picture	Description	Uses
1	A slate and stylus and Perkins machines		<p>Slate Made of thick, durable plastic; enables learners to write in Braille quietly.</p> <p>Designed specifically for use with a full-sized Stylus</p> <p>A stylus is a pointed tool used to: punch raised dots in the paper</p>	<ul style="list-style-type: none"> <li>• A slate and stylus which are used for taking notes and doing other work when Perkins Braille machine is not available</li> <li>• Braille machine is used to write Braille characters</li> </ul>
2	White canes		<p>The straight cane is made of a long tube of aluminum or fiberglass with a handle on one end and a nylon or metal tip on the other.</p> <p>The body of the cane is covered with a white paint or white reflective tape to provide visibility.</p>	<ul style="list-style-type: none"> <li>• White canes are used to ease movement</li> </ul>
3	Stand magnifier		<p>Stand magnifiers with lights are magnifying glasses with stands that rest directly on the object or page being viewed.</p> <p>Their hands free design allows them to be used for extended viewing and can be good if hands are weak or shaky.</p>	<ul style="list-style-type: none"> <li>• To hold the text in one place and closer for easy reading</li> </ul>
4	A hand magnifier		<p>A magnifying glass or a hand magnifier is a convex lens that is used to produce a magnified image of an object or letters</p>	<ul style="list-style-type: none"> <li>• Used for magnifying letters or figures for easy visualization and reading</li> </ul>
5	Voice recorder and Victor reader		<p>A voice recorder is a digital, hand held device that is used to record short reminders.</p> <p>Messages can be retrieved sequentially or by direct access by message number.</p>	<ul style="list-style-type: none"> <li>• Helps the learner to record what the teacher teaches and also discussions in the class</li> </ul>

Nº	Name	Picture	Description	Uses
6	Closed circuit televisions (CCTVs)		Closed Circuit Television (CCTV) is a system in which the circuit is closed and all the elements are directly connected. This is unlike broadcast television where any receiver that is correctly tuned can pick up the signal from the airwaves.	<ul style="list-style-type: none"> <li>For learners with low vision, these devices can magnify any object placed on the viewing platform for viewing on a monitor.</li> </ul>
7	Computer		With Braille display and/or with synthesized speech program enables the learner with VI to read work on computer in Braille on the Braille display	<ul style="list-style-type: none"> <li>The speech program reads work on the computer screen for the learner.</li> </ul>
	Optical character readers or reading machine		OCR (optical character recognition/readers) is the recognition of printed or written text characters by a computer. This involves photo-scanning of the text character-by character, analysis of the scanned-in image, and then translation of the character image into character codes. It is also known as scanners.	<ul style="list-style-type: none"> <li>These devices scan printed material and create a text file in a computer.</li> </ul>
	Braille embossers		Basic-D V5 is a small and powerful Braille printer. The utilization of double-sided fanfold paper makes this desktop Braille embosser great for Braille in the classroom, office or at home, all for an attractive low price	<ul style="list-style-type: none"> <li>Connected to a computer and used in conjunction with Braille translation software,</li> <li>Braille embossers print a Braille version of the text.</li> </ul>

Nº	Name	Picture	Description	Uses
	Screen enlargement and navigation systems		A screen magnifier or screen enlargement is software that interfaces with a computer's graphical output to present enlarged screen content. By enlarging part (or all) of a screen, people with visual impairments can better see words and images.	<ul style="list-style-type: none"> <li>For learners with low vision, screen enlargement software can increase the size of the characters on the screen, the cursors, and the menu and dialog boxes.</li> </ul>
	Spectacles hearing aids		Spectacle hearing aids are hearing aids integrated into the frames/arms of a pair of glasses.	<ul style="list-style-type: none"> <li>To make reading and writing possible.</li> </ul>
	Braillino		Several types of lightweight electronic note taking devices are available that learners can use to quickly, quietly, and efficiently take notes while in class or in the library, then download them to a computer for study or to be printed or embossed (as Braille) later on.	<ul style="list-style-type: none"> <li>Note taking devices. Most of these devices have audio output; some also create Braille on an electronic display</li> </ul>

### C. Learning resources for specific subjects

- Teacher created materials
  - Put more time and effort into materials which will be used repeatedly – use good quality Braille paper
  - Single use materials can be produced on regular bond paper
  - Software- using translations programs (Duxbury, Braille 2000, JAWS, etc.)
- Commercially produced materials
  - Tactile Books
  - Tactile Graphics – charts, maps, diagrams

**Mathematics:** Abacus, Braille clocks, tactile geometric shapes, Braille rulers, talking calculators, Braille watches (See in the above chart for some)

## Geography: Embossed atlases molded plastic maps, molded globes, etc .



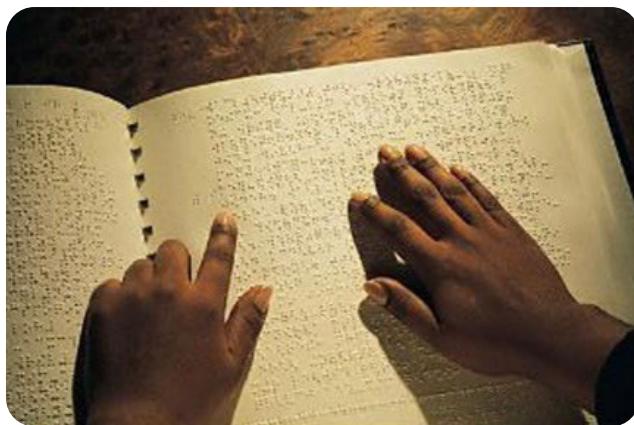
Teachers developing tactile maps using local materials Reading a tactile map

### Teaching Braille Writing:

**Choosing writing devices:** Perkins, computer's Mountbatten, hand-held lenses, braille kits, raised line check books, large print books, audible goal locators or warning device, sports field kits (including raised drawings of various sports playing fields or audible balls).

### Considerations:

- Age of learner
- Finger size/strength



- Additional physical and intellectual challenges
- What technology is locally available?
- Is technical support and repair service available?

**A reading stand** - Used to hold the text in one place.

**Braille Reading:** Proper finger position is necessary for fast, accurate and efficient Braille reading. Reading a Braille Book

## 1.2 Hearing difficulties

Educational resources adapted for learners with hearing difficulties in inclusive setting should emphasize the use of vision rather than hearing as their primary channel for communication. The following resources can be used. However there are a few learners who will benefit through hearing.

### a. Local materials for learners with hearing difficulties

Nº	Name	Picture	Description	Uses
1	Sound shakers		These are plastic containers measuring 30 mm in diameter with materials such as small stones, or seeds that produce sound	<p>They can be used to:</p> <ul style="list-style-type: none"> <li>• Stimulate the sense of hearing;</li> <li>• Train the learner to recognize different sounds;</li> <li>• Help the learner to differentiate various sounds.</li> </ul>
2	Sign language manual alphabet/ Numerical chart		This is a chart with all the alphabets a-z and numerals 0-1000 written together with their relevant signs. The letter, numerals and signs are drawn or written and are large enough to be seen within the classroom.	<p>This can be used to:</p> <ul style="list-style-type: none"> <li>• Familiarize learners who have hearing impairments with signs;</li> <li>• Encourage learners with hearing impairment to practice signing of letters and numerals;</li> <li>• Teach sign language;</li> <li>• Teach number recognition and identification;</li> <li>• Teach letters of the alphabet.</li> </ul>
3	Rwandan sign language dictionary		This is a dictionary with most of the conventional signs used by the Rwandan community.	<ul style="list-style-type: none"> <li>• Is used to teach children sign language.</li> </ul>

Nº	Name	Picture	Description	Uses
4	Flash cards		<p>These are simply cards that display the written word. Word cards should be introduced at the initial period of sounds so as not to interfere with correct pronunciation. Flash cards serve a gateway to present, practice and recycle vocabulary and are very useful in classes. They are for the activities used in class, they can be given out to early-finishers to use in small groups.</p>	<p>They are effective memory-aid tools that can help learners to learn new materials quickly.</p>

### b. Materials manufactured for learners with hearing difficulties

Nº	Name	Picture	Description	Uses
1	Rwandan sign language dictionary		<p>This is a dictionary with most of the conventional signs used by the Rwandan community.</p>	<ul style="list-style-type: none"> <li>Is used to teach children sign language.</li> </ul>
2	Flash cards		<p>These are simply cards that display the written word. Word cards should be introduced at the initial period of sounds so as not to interfere with correct pronunciation. Flash cards serve a gateway to present, practice and recycle vocabulary and are very useful in classes. They are for the activities used in class, they can be given out to early-finishers to use in small groups.</p>	<ul style="list-style-type: none"> <li>They are effective memory-aid tools that can help learners to learn new materials quickly.</li> </ul>
3	Telecom-munication devices		<p>A TDD is a small keyboard with an electronic display screen and modem attached. The telephone receiver is placed in the modem, and messages typed onto a keyboard are carried as different sets of tones on the telephone line to the other party's telephone, which must be linked.</p>	<ul style="list-style-type: none"> <li>Individuals with severe hearing impairments can communicate by telephone with a telecommunication device for the deaf (TDD).</li> </ul>

Nº	Name	Picture	Description	Uses
4	<b>Amplified (louder) tele-phones</b>		<p>Are available with a wide range of styles, models, and capabilities.</p> <p>The amplifier can be built into a special telephone or designed for occasional use and strapped onto a conventional receiver when needed.</p>	<ul style="list-style-type: none"> <li>• These devices are most often used by individuals with moderate to severe hearing impairments.</li> </ul>
5	<b>Word processors</b>		<p>Word processors are computer-based writing systems that enable the user to type text onto a computer screen and can easily remove or add words, move sentences, and make corrections.</p> <p>Spell checkers are part of most word processing programs. Some devices will simply verify and correct the spelling on a small screen; others offer a complete dictionary. Other devices actually 'speak' the words by means of a speech synthesizer, allowing the user to hear as well as see the text.</p>	<ul style="list-style-type: none"> <li>• Proofreading programs are sometimes called 'grammar checkers' as well. They are used in combination with word processing programs to check for errors in grammar, punctuation, capitalization and word usage.</li> </ul>
6	<b>Speech recognition systems</b>		In combination with a word processor, the user dictates to the system through a microphone. The spoken words then appear as text on the computer screen.	<ul style="list-style-type: none"> <li>• Allow a person to operate a computer by speaking to it.</li> </ul>
7	<b>Optical character recognition (OCR) systems</b>		When combined with speech synthesis, might be thought of as reading machines. The OCR enables the user to input hard copy text, such as books and letters, directly into a computer.	<ul style="list-style-type: none"> <li>• Reading technologies</li> </ul>
8	<b>Tape/voice recorders</b>		A tape recorder is an electrical device used for recording sounds on magnetic tape and usually also for reproducing them, consisting of a tape deck and one or more amplifiers and loudspeakers.	<ul style="list-style-type: none"> <li>• Can be used to play audio taped text for persons with reading difficulties by listening to recorded text.</li> </ul>
9	<b>Personal FM listening systems</b>		Brings a speaker's voice directly into a listener's ear by means of a small transmitter unit (with a microphone), and an equally small receiver unit (with a head- or ear-phone).	<ul style="list-style-type: none"> <li>• Listening technologies</li> </ul>

Nº	Name	Picture	Description	Uses
10	Talking calculators		Uses a built-in speech synthesizer to speak number, symbol or operation keys as they are pressed. They also read back answers from completed calculations	<ul style="list-style-type: none"> <li>• Numeracy technologies</li> </ul>

### 1.3. Learning difficulties

Educational resources for learners with learning difficulties should be based on the developmental levels of individual learners and their learning needs with the aim of promoting skills for independent living. These resources should promote the following developmental areas such as motor, social, cognitive, language and the basic learning skills, among others.

#### a. Some locally made materials for learners with learning difficulties

Nº	Name	Picture	Description	Uses
1	Block letters		These are sets of wooden building blocks of 45mm x 45mm x 45mm with letters on the surfaces. Capital and lower case letters are written on the surfaces.	<p>These can be used to:</p> <ul style="list-style-type: none"> <li>• Familiarize the learner with the alphabet;</li> <li>• Strengthen left to right progression;</li> <li>• Teach sounds;</li> <li>• Teach letters of the alphabet;</li> <li>• Teach spelling of simple words.</li> </ul>
2	Alphabet chart		This is a plywood board measuring 400mm x 350mm with letters of the alphabet and pictures corresponding to the words which start with each letter. Pictures can be pasted or drawn on the plates.	<p>This can be used for:</p> <ul style="list-style-type: none"> <li>• Recognition of alphabets in their correct order;</li> <li>• Matching letters with pictures;</li> <li>• Developing eye-hand coordination;</li> <li>• Teaching communication skills.</li> </ul>
3	Counting abacus		This is made from wood measuring 305mm x 175mm, wires and beads (small things with hole through it). Wooden beads in different colors are used as counters.	<p>It can be used to develop:</p> <ul style="list-style-type: none"> <li>• Cognitive abilities through identification of numbers and counting;</li> <li>• The concept of color;</li> <li>• Simple arithmetic skills;</li> <li>• Knowledge of place value of numbers</li> </ul>

4	Number rods		These are rectangular wooden rods that can be placed according to size and number of markings. The largest can be 1000mm and the shortest 100mm.	These can be used to teach: <ul style="list-style-type: none"> <li>• Number concepts;</li> <li>• Number values;</li> <li>• Size concept</li> </ul>
5	Clock face model		This is a circular board measuring 300mm in diameter. Units of time are drawn on cylindrical discs as numerals or as activities which take place during the day. The discs are placed in the cut out holes.	This can be used to: <ul style="list-style-type: none"> <li>• Teach time concept;</li> <li>• Teach number concept;</li> <li>• Develop finger dexterity;</li> <li>• Develop eye-hand coordination;</li> <li>• Help the learner recognize activities of the day.</li> </ul>

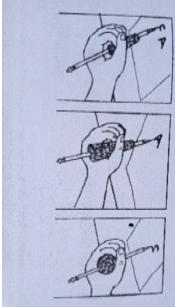
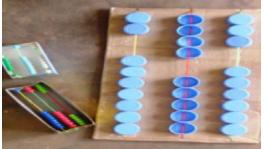
### a. Some manufactured materials for learners with learning difficulties

Appropriate assistive technology for learners with learning disabilities can include, but is not limited to, computers, video cameras, laser videodiscs, taped books, software programs, spellers, tape recorders, readers, scanners, calculators, etc. For many learners with learning disabilities, assistive technology adaptations are imperative for successful achievement in schooling.

### 1.4 . Physical disability (PD)

Choosing educational resources for learners with PD should aim at meeting identified learning needs. The following problems may affect learning for learners with physical disabilities:

- Poor balance and posture
- Difficulty in beginning to sit and stand
- Stiffness or floppiness of body parts such as the wrist, elbows and lips
- Difficult in holding pens, books, writing or drawing
- Difficulty in controlling body muscles
- Abnormal posture of the body
- Difficulty in eye or lip movements
- Possible speech and visual difficulties
- Awkward gross motor movement
- Poor social relationship among some learners

Nº	Name	Picture	Description	Uses
1	<b>Pens and pencils with thick handles</b>		Usually, a pen or a pencil rounded by a string to fit the hand. The second one is made of wood measuring 120mm x 40mm x 40mm and rubber band or a piece of string. The surface is cut into the shape of the fingers. A hole, measuring the diameter of a pencil is drilled through where a pencil is put and fastened with a string or rubber band.	Helps for easy grasp of pens and pencils
2	<b>Head stick</b>		For those who write without hands	<p>This can be used to:</p> <ul style="list-style-type: none"> <li>• Help a person with no hands to point or write;</li> <li>• Turn pages when reading by an amputee. Can be used to type.</li> </ul>
3	<b>Abacus</b>		Locally made materials can be: counting tray, peg boards, matching objects and sorting boards...	Just use it to count 1 up to 10
4	<b>Book holder4</b>		A learner with upper limb amputation uses his foot to write. The book is supported on.	A learner with upper limb amputation uses his/her foot to write supported by the book holder.

### b. Some manufactured materials for learners with physical disabilities

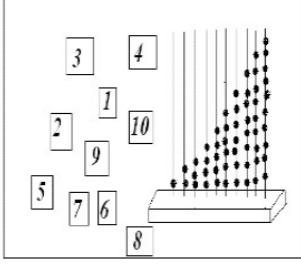
Nº	Name	Picture	Description	Uses
1	<b>Toilet seat</b>		This is a plywood seat made according to the needs of the user. It is supported at the back and sides. It has a hole which is covered when not in use. The size depends on the user but normally a height of mm is commonly made.	<p>This can be used for:</p> <ul style="list-style-type: none"> <li>• Toileting;</li> <li>• Teaching daily living skills;</li> <li>• Training independent sitting.</li> </ul>

2	Peg page Turner		A small object placed on each page to turn pages	It is used for learners with low muscle tone and developmental delays in fine motor skills to turn pages or hold the pages of a Book.
3	Standing frame		This is a wooden and metal frame that helps a learner to be independent in writing	It is used by learners with mild to severe disabilities such as spinal cord injury, traumatic brain injury, cerebral palsy, spina bifida.... to help them to write.

Devices can range from a pencil grip (to hold very tightly), or adapted scissors, to a slant board to promote appropriate placement of reading material, or a tape recorder for class notes or completing assignments.

### Materials for learners with intellectual disabilities

#### Some of the learning resources that can be used by learners with intellectual disabilities

Nº	Name	Picture	Description	Uses
1	Abacus		Abacus training focuses on the development of mental calculation capabilities and ensures that the learner understands the basic number system thoroughly.	Number skills
2	Stacking toy		A doll, finger puppets, stacking toys, matching objects, missing parts and weighing scale....	Cognitive skills

3	Tracing tools		Puppets, a stacking toy, alphabetic puzzle, words and pictures, picture books, tracing	Language skills
4	A ball, seeds for sorting, scissors for cutting, etc.		Balls, beans and other cereals for sorting, scissors for cutting, a doll and other materials for tailored activities to develop fine and gross motor skills, academic, social and language skills,	Fine and gross motor, academic, social and language skills
5	Music and Dancing tools		Drums, flutes, traditional harps, piano or organ, guitar, are used by teachers in a range of tailored activities to develop fine and gross motor, academic, social, speech and language skills through role play, singing, storytelling and dance.	Therapies through singing and dancing to develop a range of delayed skills.



## End of unit assessment

1. Discuss five assistive technologies used by learners with visual and hearing impairment.
2. Name five educational resources you would consider when teaching learners with physical and learning disabilities in an inclusive setting.

# UNIT 2

## USE OF ASSISTIVE TECHNOLOGIES



### Learning objectives

By the end of this unit, trainees should be able to identify some assistive devices and their use.



### Introductory Activity

#### Introductory activity

What is an assistive technological device?

It is a tool that enhances communication, accessibility, and engagement for learners who are deaf, hard-of-hearing, or with visual impairment.

#### When and how to use it?

Device	Purpose	Classroom use
<b>Video Relay Services (VRS)</b>	Enables learners who are deaf to communicate via sign language interpreters over video calls.	Use during parent-teacher meetings, remote learning, or peer collaboration.
<b>Real-time Captioning Tools (CART, Ava, Otter.ai, Google Meet)</b>	Converts spoken language into text instantly.	Activate during lessons or group discussions to provide live captions.
<b>Speech-to-Text device</b>	Transcribes speech using apps on laptops, tablets, or smartphones.	Ideal for note-taking, reviewing lessons, or following verbal instructions.
<b>Interactive whiteboards</b>	Supports bilingual teaching with visual aids and sign language integration.	Use to display visual content alongside sign language videos or written text.
<b>Projector &amp; Visual Displays</b>	Enhances sign-supported instruction.	Project sign language videos, captions, or visual cues during lessons.

Device	Purpose	Classroom use
<b>Hearing loop</b>	Amplifies sound for learners with hard-of-hearing.	Connect to teacher microphones or classroom audio systems.
<b>Alerting device</b>	Uses flashing lights or vibrations for signals.	Replace auditory bells or alarms with visual/tactile alerts.
<b>Bilingual e-books</b>	Combines sign language video with written text.	Assign for reading practice or independent study.
<b>Closed Captioned &amp; Signed Videos</b>	Makes multimedia content accessible.	Use for video-based learning
<b>Translation Tools (AI-based)</b>	Converts sign language to text and vice versa.	Use for real-time communication or content creation.
<b>Tactile Sign Language Tools</b>	Supports learners who are deaf-blind.	Incorporate tactile signs or Braille-based devices.
<b>Accessible LMS (Moodle, Google Classroom)</b>	Offers captioning and screen reader compatibility.	Upload materials with captions, transcripts, and visual aids.



### End of unit assessment

Propose two assistive devices for a learner with hard of hearing. Justify your choice.

# UNIT 3

## CREATING LOCAL EDUCATIONAL RESOURCES



### Learning objectives

By the end of this unit, trainees should be able to:

- Explain the importance of making own teaching and learning materials to cater for learners with special educational needs.
- Explain the process of making any of the materials.
- Identify the most common local materials used in making various educational materials.
- Explain the techniques of making each type of educational resources.



### Introductory Activity

What must you bear in mind when designing and producing local educational resources?



### Content Summary

Methods and techniques of making educational materials are different. Teachers have to think broadly according to their teaching and their learners' needs. The raw materials are available in the natural environment of teachers and learners; educators are expected to be actively creative enough. Locally made resources respond to realities the learners live in, and enhance the teaching/ learning process. So, thinking that educational materials are only bought is wrong, because they can also be locally made.

### 3.1 . Development outline for making low cost educational resources

The following steps should be followed:

- Try to establish the learners' level of development or learning needs through the process of SEN assessment.
- Decide which specific objectives are needed to help the learner overcome his/her learning needs. The type of activity is a crucial guiding factor in the production of resources adapted for individual learners with special educational needs.
- Decide which immediate subject skills or activities you would like to teach in relation to the learner's established learning needs after assessment, e.g. social, motor, language, cognitive, behavioural, academic and others.

- Explain in detail the process you are likely to follow when designing and making the educational resources you have chosen in terms of:
  - Clearly state the tools for making resources.
  - Materials to be used in its production.
  - Size of the resource you intend to make.
  - Quality and quantity of the resource needed.
  - Design or sketch of the resource you intend to make, clear and in details explaining the procedures and plans to be followed in its production.

### Examples of materials that a teacher can make and use

#### Numbers



**Objective:** To introduce numbers

**Material to use:** Hard paper, marker, glue, Manila paper, paints, coloured pencil, scissors

**How to use it:** Draw and fix them on the wall in the classroom.

#### Fruits and vegetables



**Objective:** To develop cognitive skills

**Material to use:** Hard paper, Manila paper, coloured pencils, markers, scissors

**How to make:** Just cut a piece of Manila paper and draw the type of fruit you need. Use different colours to make it attractive.

#### Wall clocks



**Objective:** To develop cognitive skills, eye-hand coordination skills and fine motor skill, numeracy.

**Material to use:** Manila paper, markers, glue, cords, scissors.

**How to make:** It is an easy exercise. Just imitate the real one that learners know.

## Musical instruments



**Objective:** To develop leisure and cultural activities, stimulation of listening skills.

**Material to use:** Leather, cords, bottle tops, nail to pin the bottle tops

**How to make:** Production of sound and rhythm.

## Colours/ Using materials for construction

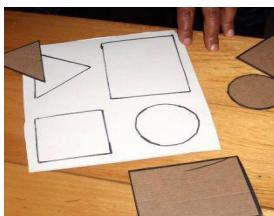


**Objective:** To develop classification skills

**Material to use:** Old paint boxes

**How to use it:** With these colour bottles, a teacher explains names of colours and helps learners to group, classify, sort and manipulate the bottles.

## Geometric forms



**Objective:** To introduce different shapes

**Material to use:** Hard paper, markers, glue, scissors

**How to make it:** Draw a geometric form and cut it to produce it tangible to learners

## Quantities



**Objective:** To identify different weights

**Material to use:** Empty bottles, paint, juice, coloured water, etc.

**How to use it:** Use transparent empty bottles (of Nile, Inyange, Huye water) and teach concepts like: 'less than', 'equal', 'more than'. Put the bottles in order to help learners to sort them according to sizes, weight, colour, etc.



## End of unit assessment

Trainees design and produce the materials related to the introduction of Braille transcription, for learners with learning difficulties and cognitive disorders, with eye-hand coordination disorders, with fine and gross motor skill difficulties, or any other related to special educational needs.

### Questions:

1. Identify the most common raw materials used in the production of Rwandan traditional crafts that could be adapted to produce educational resources for learners with special needs.

2. Identify the most common waste materials that could also be used to produce educational resources, e.g Bottle tops, plastic bottles, drinking straws, etc.
3. Explain the design and techniques of producing each of the educational material using locally available resources above.
4. Choose any special educational needs and designate any five educational materials that could be sources from the internet national markets.

## **CHAPTER 5:**

### **IMPLEMENTING INCLUSIVE EDUCATION PEDAGOGY**

#### **Introduction**

This chapter aims to help trainees to be able to make lesson plans, lesson delivery and inclusive assessment as required by the new competence-based curriculum, which identifies inclusive education as a cross-cutting priority. The chapter covers three themes: lesson planning; lesson delivery; and lesson assessment.

# UNIT 1

## LESSON PLANNING



### Learning objectives

By the end of this unit, trainees should be able to develop an inclusive lesson plan.



### Introductory Activity

The trainer gives an example of a lesson plan model developed by Rwanda Basic Education Board (REB) and ask the trainees to work in groups and write an inclusive pedagogical lesson plan.



### Content Summary

#### A lesson plan

Good lesson planning is essential to the process of teaching. A lesson plan is a teacher's detailed description of the course of instruction or 'learning trajectory' for a lesson. A daily lesson plan is developed by a teacher to guide class learning. Details will vary depending on the preference of the teacher, subject being covered, and the needs of the learners.

Before making a lesson plan, the teacher should refer to the Individual Education Plan for each learner. An IEP is a legal written document and a systematic way to monitor and assess the progress of a learner with special educational needs. It involves planning that caters for each learner's specific needs. An IEP includes:

- Description of special educational needs a learner has
- Plan of action to address the identified needs of the learner
- Clear goals and objectives need to be measurable and observable
- Specific activities and actions to help the learner achieve the goals (to be SMART)
- Additional services that will be required and to be provided by the school
- Ways to evaluate the learner's progress.

#### Importance of a lesson plan

- It helps to make your teaching more effective.
- It helps to make your lessons well organized.
- It helps to respect time

## Key elements in lesson planning

Planning a lesson is an important responsibility for a teacher and critical for enhancing the students' learning and teacher's confidence. The competence-based lesson plan has 6 different parts that teachers are expected to complete.

### a) Check your scheme of work

Before the start of every academic year, teachers accomplish the scheme of work based on the subject syllabus, the school calendar and time allocated to the subject per week. For lesson plan preparation, consider the following questions:

- What lesson have you planned to teach in a given period, such as a term, a month and a week?
- What key competence do you hope to develop by the end of unit?

### b) Identify the generic competences and cross cutting issues

From the scheme of work, the teacher identified the key unit competence by looking at the subject syllabus. Each lesson must also incorporate generic competences and cross cutting issues.

### c) Set instructional objectives for the lesson

An instructional objective should have at least 5 components. The following steps can guide you to write the statement:

- Reflect on the conditions under which learners will accomplish the assessment task (teaching aids, techniques, outdoor or indoor).
- Determine who you are talking about (learners).
- Identify at least one measurable competence (knowledge, skills, attitude or values) you are looking for – evidence of learners' activity. Use a verb which denotes the end result of learning activities. (e.g.. read, write, explain, and discuss). Aim for Higher Order Thinking Skills.
- Include the content of the activity. You can draw this from the subject syllabus itself.
- Set standards of performance. Write down the criteria for minimum acceptable performance (e.g. time, number of correct answers, presence of expected/shared values).

### Examples of instructional objectives

Using an extract on agricultural products from an article in The New Times, and transcribed in Braille for learners with Visual difficulties, the learners will be able to read fluently 150 words in 5 minutes, 10 minutes for learners with speech difficulties and 15 minutes for those with cognitive difficulties.

- Using an extract from an article in The New Times: Condition
- Learners: Who (diverse learners)

- To read: Action
- Fluently in fixed time: Performance standard
- An extract of 150 words on agricultural products: Content

#### **d) Identify the types and number of learners with SEN**

In the section titled 'Type of Special Education Needs and number of learners in each category', insert the type of SEN that you have identified in your class, and the number of learners with SEN in the class (Chapter 5). In addition, note how learners with SEN will be integrated or accommodated in the game or activity so that they are also able to participate and learn.

#### **e) Identify organizational issues**

This part of the lesson aligns with the principles of creating positive learning environments, with a particular focus on children's safety and inclusion through play-based learning (UNICEF, 2018).

#### **f) Decide on the teaching and learning activities**

In this part the teacher summarizes the learning and teaching process including main techniques and resources required. Afterwards, the teacher details activities to be carried out by the teacher and learners. In the column of teacher's activities, the teacher describes the activity using action verb in infinitive form. The questions and instructions provided by the teacher are also written in this column. In column of learner's activities, the teacher describes the learner's expected activities, findings and answers. However, for some activities or answers which cannot fit in that column, the teacher will indicate them in appendix. The teacher will specify if the activities will be carried out individually, in small groups, or by the whole class (REB, 2017).

In the column of the generic competences and cross cutting issues to be addressed, the teacher writes down generic competences to be developed through learners' activities and how they will be developed. The cross-cutting issues to be addressed depend on the lesson content and activities.

In the column of steps and timing in the lesson plan format, there are three main steps; introduction, development of the lesson and conclusion.

#### **A sample of an inclusive lesson plan**

When planning a lesson to be taught in inclusive classroom, the educator will have to set out clear and achievable objectives for the inclusion of all learners in the classroom, break down the objectives and the lesson plan into progressive and feasible steps to facilitate progress and learning, use activities providing different sensory approaches, select, develop and use a wide range of resources to meet the various needs in the classroom and finally understand the meaning of differentiated pedagogy and how the lesson can be tailored to meet the needs of all learners.

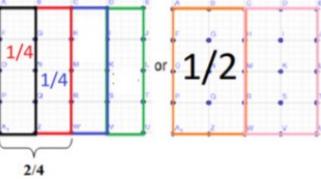
## INCLUSIVE LESSON PLAN

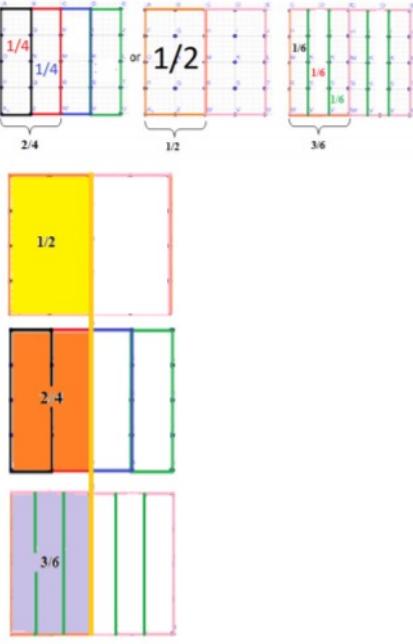
**School Name:** Nyabugogo Primary School

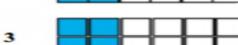
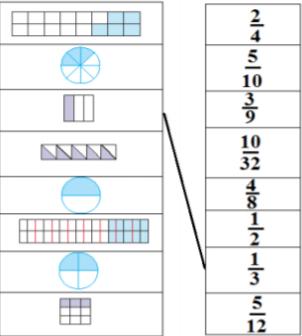
**Teacher's name:** CYIZA John

Term	Date	Subject	Class	Unit N°	Lesson N°	Duration	Class size				
1	19/09/2025	Mathematics	P5	4	3 of 12	40 min	42 learners				
Type of Special Educational Needs to be catered for in this lesson and number of learners in each category				2 learners with low vision 1 learner with Dyscalculia							
<b>Unit title:</b>		Equivalent fractions and operations									
<b>Key unit competence</b>		Learners will be able to calculate, add and subtract equivalent fractions and apply this knowledge to solve related problems									
<b>Title of the lesson</b>		Exploring and comparing fractions using models									
<b>Instructional Objective</b>		Using paper, manila papers, dot paper or grid paper and cartons, P5 learners will be able to explore and compare fractions and match dot to form any figure representing a portion of an equivalent fractions correctly, precisely and confidently in a given time.									
<b>Plan for this Class (location: in/ outside)</b>		In class, arrange desks in order to allow learners to work individually, in pair or in groups									
<b>Learning Materials (for all learners)</b>		Manila papers, dot paper, grid paper, cartons, scissors, pencil or pens to join dots on paper and grid paper.									
<b>References</b>		Rwanda Basic Education Board (2025), Mathematics Pupils Book Primary 5, Page 54-56.									

Timing for each step	Description of teaching and learning activity		Generic competences and Cross cutting issues to be addressed + A short explanation
	Teacher activities	Learner activities	
	Learners begin by reviewing what they know about fractions and noting what they would like to learn after the lesson. In groups, they complete activities related to equivalent fractions by cutting paper into fractional representations and matching equivalent fractions. Learners give group presentations and harmonise the results under the teacher's guidance. Finally, learners are given individual application and assessment tasks, and corrections are made by learners on the blackboard in a plenary session under the teacher's guidance.		

<b>Introduction 5 min</b>	<ul style="list-style-type: none"> <li>Invite learners to use a concrete/tactile dot paper and show different fractional portion they can form and compare them</li> </ul>	<ul style="list-style-type: none"> <li>Show and compare different fractional portion on dot papers. e.g.: <math>1/2</math>; <math>2/4</math>; <math>3/6</math>,....</li> </ul> 	<p>Communication is developed through answering questions and group discussion.</p>
<b>Development of the lesson</b>  <b>Practical activities</b>  <b>10min</b>	<ul style="list-style-type: none"> <li>Organize learners into groups and ask them to do activity 1 and 2 and Give instructions related to activities</li> </ul>	<ul style="list-style-type: none"> <li><b>Activity 1:</b> Cutting into equivalent fractions In groups, using same size papers, same size manila paper, razors, scissors, pen, pencils, and rulers, draw, cut and compare the fractional portions of the following fractions <math>3/6</math>, <math>2/4</math>, <math>1/2</math></li> </ul>	<ul style="list-style-type: none"> <li>Cooperation, interpersonal relationship management and life skills are developed when learners share their ideas in groups and when presenting their work.</li> <li>Critical thinking skills are developed through observation/touch, feeling, association and cutting out dots on sheets of paper to form equivalent fractions.</li> <li>Gender equality is addressed by assigning the same tasks to girls and boys throughout the lesson.</li> <li>Inclusive education is addressed through the use of dotted paper, cut-outs and different colours to make it easier for the two learners with low vision, while the learner with dyscalculia is given simpler, more practical activities on equivalent fractions.</li> </ul>

<b>Presentation of students' findings and exploitation (10 min)</b>	<ul style="list-style-type: none"> <li>Invite groups to post their findings in different corners of the classroom and ask them to present their work</li> </ul>		
<b>Summary (5 min)</b>	<ul style="list-style-type: none"> <li>Facilitate learners to summarize the lesson.</li> <li>Invite learners to take notes on key points from learners' presentations and build on them to harmonize their works.</li> <li>Facilitate learners to elaborate the summary from the presentation.</li> </ul>	<ul style="list-style-type: none"> <li>Activity 2: use dot papers, grid papers. In pairs, learners observe, touch the dot papers and grid papers and form by matching, joining dot or numbers and shading in order to get portions of the following fractions: 2/3; 4/6; 8/12, compare them and conclude whether or not they are equivalent.</li> </ul>	<ul style="list-style-type: none"> <li>Critical thinking skills are developed through analysis of different fractions and deducing that they have the same value</li> <li>Problem solving skills are developed through application of equivalent fractions in real life situations.</li> </ul>
<b>Application (5 min)</b>	<ul style="list-style-type: none"> <li>Ask Learners to individually work out the application activity.</li> <li>Invite Learners to work out in groups the application activity and finally, they make a correction on the chalk board.</li> </ul>	<ul style="list-style-type: none"> <li>Through gallery walk, the reporters (representative of the group) present their findings on behalf of the groups while other learners follow the presentations and ask questions for better understanding. Write down the main points in their notebooks.</li> <li>In math, equivalent fractions can be defined as fractions with different numerators and denominators that represent the same value or proportion of the whole. Here's an example of equivalent fraction</li> </ul>	

	<p>Application activity: The three diagrams below show rectangular plots of land. Observe the shaded parts and write down the represented fractions for Plot 1, Plot 2 and Plot 3. Compare the three fractions and explain how you find their size.</p> <p><b>Plot 1</b> </p> <p><b>Plot 2</b> </p> <p><b>Plot 3</b> </p> <p>Do activity, and then make correction on chalkboard with the harmonization from the teacher</p>	
<b>Conclusion (5min)</b>	<ul style="list-style-type: none"> <li>Write assessment questions on the chalkboard and ask learners to work out individually.</li> <li>Individually, learners do the assessment activity.</li> <li>Activity: analyze this diagram and, match the drawings with the right fraction. Identify and write down equivalent fractions among the list.</li> </ul> 	Inclusive education is developed through using flash cards or drawings to help learners with low vision and Dyscalculia.
<b>Teacher self-evaluation</b>	To be completed after the lesson to check whether all learners participated actively and inclusively in the lesson, whether the objectives were achieved, and whether reinforcement activities are needed to improve student learning.	



## End of unit assessment

### Micro-teaching activity

Form four groups. Each group should select a topic from a subject of its choice: Languages (English, French or Kinyarwanda), Integrated Sciences, Mathematics, Social Studies & Religious Education, etc...). Trainees should take turns to teach the topic to their group members. They should make a lesson plan before teaching and IEPs for children with disabilities. Feedback should be given after each session by trainees showing where it is well done and areas for improvement.

# UNIT 2

## LESSON DELIVERY



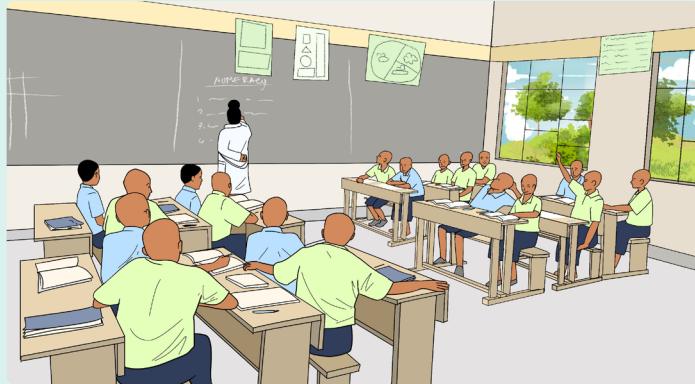
### Learning objectives

By the end of this unit, trainees should be able to:

- Make their classrooms conducive for learning.
- Provide individual help to children with SEN.
- Make and use assistive devices/materials.
- Apply multi-sensory approach in teaching reading, writing and mathematics.



### Introductory Activity



*A classroom photo*

Interpret the photo above

**In groups:**

1. What are the problems with this classroom? Does it have enough and adapted desks?

Is the chalkboard inclusive to all learners? Are windows allowing light to get into classroom? Are teaching and learning material adapted to all learners available? If yes are they displayed in the classroom to be accessible to all learners?

2. Write down the problems of the classroom shown in the photo and mention the identified problems.

3. Suggest solutions to the problems identified so as to make the classroom a better place for learning.



### 2.1. Classrooms setting

The layout of a classroom can help or obstruct a child's learning. Sometimes there isn't much teachers can do to change their classroom settings; some say they do not have the money to make proper settings; while others say that the school administration should do it. But here are some ideas:

- Make sure learners with special needs are seated where appropriate (teachers make informed decisions based on each child's specific requirements). This is very important for learners with sensorial difficulties and those with learning difficulties.
- Try to arrange the classroom so that learners can move about freely, especially if some children have visual or mobility problems. For example, make sure that a child who uses a wheelchair or crutches can get in and out of his/her desk easily.
- If you have the space, try to set aside an area of the classroom where you can work with certain children individually or in small groups in order to achieve peer learning.
- Sitting arrangement can help to promote cooperative learning during teaching/ learning activities.
- Have a box that contains some story books or simple games that children can use when they have completed their work ahead of others.
- Display pictures, posters, drawings and examples of learner's work on the walls. Make sure they are displayed at the learners' eye level rather than high up on the walls. You can also add different textures for touching to help learners with visual problems.
- Some learning is better done outside the classrooms. For example, lessons about plants and animals could be done in the school compound
- Remember that learners with hearing and visual problems will find lessons outside the classroom more difficult to understand. Make sure such learners sit very close to you.
- Bring in a mat to make a quiet reading corner.
- Whenever possible, use real objects to help the learners understand. Make sure teachers allow the children to handle and touch these objects if they are not harmful to them. This is very important for learners with seeing and learning difficulties.
- Keep the classroom clean. Make sure all the learners, including those with special educational needs, help to clean the classroom.



*Classroom setting*

## **Class monitoring**

It is essential that a teacher walks around the class checking what the children are doing when they are working on their own or in groups. If a teacher does not monitor during a lesson, he/she will not know which learners are having difficulties, thus he/she will not be able to help them.

### **Monitoring how learners are learning**

- Checking that all the learners understand what they are supposed to be doing
- Checking that all the learners are doing an activity correctly
- Finding out learners who need help
- Spotting mistakes and correcting them there and then.

Learners with special needs need more help and support than other learners. They will benefit more if the teaching is directed to their particular needs. Individual help should focus on the skills and knowledge the learner needs to fully participate in the class. The first step to giving individual help is good monitoring. It is not easy to give individual help when there are many learners in the class, but here are some ideas:

- Learners with special needs can be paired with peers who can help them. This can benefit both learners. It is an active peer-centered approach.

- Teachers can spend a few minutes at the end of the lesson going through the main points. This can also be done while the rest of the class is busy doing an activity. The teacher must ensure that other learners are doing the activity correctly before spending time with an individual learner.
- Volunteer helpers can be recruited to come into class to assist particular learners. Family members, mothers, grandparents may be willing to do this. It may be for a limited period of time to help learners settle into class or master the basics of certain subjects.
- Two teachers can combine classes. One teacher manages the whole group while the other spends time helping learners with special needs.

# UNIT 3

## LESSON ASSESSMENT



### Learning objectives

At the end of this unit, trainees should be able to:

- Explain the purpose and principles of inclusive assessment.
- Identify inclusive assessment strategies.



### Introductory Activity

The trainer asks the trainees to work in groups and write the main components of lesson assessment.



### Content summary

#### Purpose of inclusive assessment

The overall purpose of inclusive assessment is the same as for any assessment that caters for all learners including those with special education needs. The purpose of assessment is to improve learners' learning and teachers' teaching as both learner and teacher respond to the information that it provides.

#### Principles of inclusive assessments

Inclusive assessment involves the following:

- A range of methods and strategies that all aim to gather clear evidence about learners' achievements of learning outcomes for specific subjects;
- Procedures that may fulfill other purposes in addition to informing teaching and learning ( e.g initial identification of SEN or monitoring of educational standards) but that are based upon shared concepts and values for assessment and inclusion as well as the principles of participation and collaboration.
- Methods that report on the outcomes of learning but also provides teachers with information on how to develop and improve the process of learning for an individual learner or groups of learners in the future.

#### Tips on inclusive assessment

Assessment should give an indication of a learner's level of achievement of the learning outcomes associated with the course, topic or skill being assessed. However, if a learner has a special educational need, then the assessment may need to be modified so that the learners can demonstrate their learning.

An **inclusive assessment** refers to approaches to evaluating learners that consider the diverse needs, abilities, and backgrounds of all learners, including those with disabilities, learning difficulties, or other barriers to learning. The goal is to ensure fairness, equity, and accessibility so that every learner has an equal opportunity to demonstrate their knowledge, skills, and competencies.

### Key features of inclusive assessment include:

According to UNESCO (2017). A Guide for Ensuring Inclusion and Equity in Education. Paris: UNESCO), the following methods can be used:

- **Flexibility in methods** (oral, written, practical, portfolio-based, digital tools).
- **Use of reasonable accommodation** such as extra time, assistive technology, or simplified instructions.
- **Focus on strengths** and progress rather than just limitations.
- **Alignment with inclusive education principles**, ensuring assessments do not disadvantage learners due to language, disability, or socioeconomic factors.

For instance: A teacher is assessing reading comprehension in a Primary 4 class. Instead of only giving a written test, the teacher uses multiple assessment methods:

- **Oral questioning** for learners who struggle with writing.
- **Visual aids (pictures or storyboards)** to support learners with limited language proficiency.
- **Extra time or use of a text-to-speech tool** for learners with reading difficulties.
- **Group-based activities** where learners can demonstrate comprehension through discussion or role-play

### Different ways of assessing learners based on their categories:

#### 1. For learners with physical disabilities:

- Allow scheduled breaks during lectures, tests and exams
- Allow more time for the learner to finish his/her work.
- Provide different accommodation during exams. For example, provide separate venue, provide extend time for learners with Cerebral Palsy or Muscular Dystrophy, provide a scribe to those who are unable to write their answers, or a reader to those who are etc.
- If appropriate, let the learner use computers during the exam (when the learner has been using it in the instruction)
- Where appropriate, give complete oral tests or completely written tests, whichever suits the learner's needs
- Adapt some questions in exams without lowering the learning objectives. For example, the teacher may ask a question: Which is the capital of Rwanda?
- For a learner with severe cerebral palsy who is unable to talk or has difficulty in writing, the teacher may reformulate the question and ask: The capital of Rwanda is: a) Bujumbura, b) Kigali, c) Kampala

## 2. Learners with intellectual disabilities

- Use short and clear questions,
- Direct learners step-by-step
- Use practical tasks such as Role play, Matching questions, hands-on activities instead of written tests.
- Accept alternative response formats such as oral answers, drawings, or using objects.
- Provide small assessments like: Break down content into smaller chunks and test progressively
- Provide activities or assignment related to real life situations.

## 3. Learners with hearing difficulties

- Use sign language interpreters, captioning or visual aids while giving learners with hearing difficulties instructions in exams or assignments.
- Prefer written assessments instead of oral exams.
- Use of Diagrams, charts, and pictures can support understanding and easily facilitate him or her to perform well in exam.
- Where available speech- to-text tools, captioned videos, or FM Systems can be used, for instance in online exam, in-person etc.)
- Allow learners to demonstrate their skills through performance, role play and experiments.

## 4. Learners with visual difficulties

- Make sure that one of the following formats: braille writing, large print, audio recordings or screen readers are available before the exam.
- Allow the oral assessments for instance: Read questions aloud and accept oral responses.
- Use tactile materials: For example: In social studies: Teacher could use raised maps, embossed diagrams to assess if the learners understood the provincial boundaries.
- Assistive technology: in any subject the teacher can use Braille notetakers, talking calculators, screen -readers during the assessment.
- Give additional time based on the reading and writing pace of individuals.

## 5. Learners with Attention Deficit Hyperactive Disorder (ADHD) and Autism

- Use simple and concrete wording during the exams
- Teachers can use charts, symbols or pictorial instructions to facilitate learners with Autism to perform well during tests.
- Accept responses through AAC devices, typing or drawing.
- Assess in a low- stimulus, predictable space to reduce anxiety as they become easily frustrated and withdraw from activities.
- Evaluate social interaction, communication and problem-solving skills in his or her everyday life.
- Teacher can use short sessions instead of one long exam.

# UNIT 4

## SPECIAL EDUCATIONAL ASSESSMENT AND DEVELOPMENT OF IEP



### Learning objectives

By the end of this unit, trainees should be able to:

- Understand special educational assessment.
- Learn about the IEP cycle.
- Discuss the stages of implementing and evaluating the IEP.
- Create IEPs for children in your school.

### 4.1. Understanding Special Educational Assessment for Learners with Disabilities and SEN



#### Introductory Activity

Special educational assessment is a process that helps teachers identify the strengths and needs of learners with disabilities and special educational needs. It involves understanding the child as a whole in order to determine the educational support best suited to his/her needs.

#### Purpose

The main objective of special educational assessment is to determine the nature and extent of a learner's needs in order to design appropriate and effective interventions. This process takes place in two key phases. The first phase is **screening**, which serves to identify learners who may require further assessment. It acts as an early detection phase.

The second phase consists of a **multidisciplinary assessment**, during which a team of professionals, such as teachers, psychologists and medical/ rehabilitation therapists, work together to obtain a comprehensive view of the learner's specific difficulties or disabilities.

#### How to conduct assessment?

Assessment should never be a solitary task. It is carried out with the technical support of a multidisciplinary assessment team made up of various professionals (including doctors, clinical psychologists, physiotherapists, occupational therapists, speech therapists, audiologists, ophthalmologists, special needs coordinators and teachers). These professionals work in collaboration with parents, as they are the ones who know their children's history and background best.

Effective assessment uses standardised tools and techniques. These may include, for example, **medical diagnosis, observational checklists, interviews with parents and learners, and functional assessment of behaviour**.

### Using assessment results

Once the assessment is completed, the results must be translated into concrete strategies. The assessment serves as the basis for developing IEPs and making informed decisions about classroom accommodations and support services.

## 4.2. Developing an IEP

### Introduction

After conducting an assessment of children with disabilities, a range of recommendations can be made to ensure they receive appropriate support for inclusive and effective learning. These recommendations should be tailored to the child's individual needs, based on the results of the assessment.

### What is an Individual Education Plan?

An Individual Education Plan (IEP) is a personalized document developed for learners with special educational needs to ensure they receive tailored support in school. It outlines the student's specific learning goals, the strategies and accommodations required to meet those goals, and the roles of teachers, parents, and specialists in the process. The IEP is created through collaboration among educators, parents, and sometimes the student, and is reviewed regularly to track progress and make necessary adjustments. Its purpose is to promote inclusive education and help each student reach their full potential.

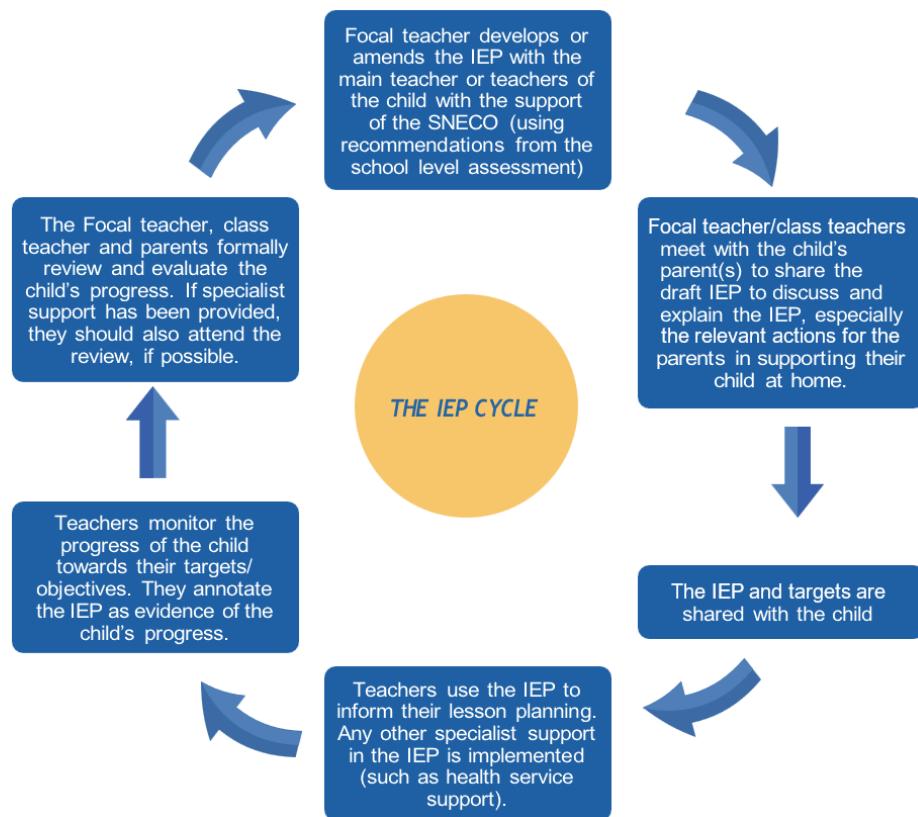
### Tips to developing an IEP

- **Develop an Individualized Education Plan (IEP):** Clearly outline learning goals, accommodations, and teaching strategies.
- **Provide appropriate accommodations or modifications:** Such as assistive devices, extra time, alternative assessments, or simplified materials.
- **Inclusive classroom strategies:** Encourage peer support, group work, and positive behavior management.
- **Referral to specialists:** Such as audiologists, speech therapists, occupational therapists, or physiotherapists.
- **Medical follow-up:** If physical or health-related concerns are identified.
- **Provision of assistive devices:** Such as wheelchairs, hearing aids, eyeglasses, or communication boards.
- **Train parents/guardians** on how to support their child's learning and development at home.
- **Counseling or psychosocial support:** For families dealing with stigma, stress, or emotional challenges.

## An IEP includes:

- Description of special educational needs that a learner has
- Plan of action to address the identified needs of the learner
- Goals need to be measurable and observable
- Specific activities to help the learner are intended to achieve the set goals
- Additional services that will be required are thought before and some are provided by the school, in collaboration with other relevant institutions
- Set ways to evaluate the learner's progress.

## IEP cycle



## Example of an IEP

Tell the trainees to get into groups.

Task 1. Tell the trainees to listen to the following story of Kamari who has special needs.

"Kamari is 6 years old. He recently started school. He sits at the back of the class and holds his books very close to him face in order to read. He often bumps into desks. When the other learners are studying Maths, Kamari does not participate because the questions are written on the board. Now, he is not at the same level as the other children."

1. Ask the trainees: "What are Kamari's difficulties?"
2. Read the case study again and listen to the answers from the trainees.

## Answer

Kamari has difficulty in Maths. He may have a visual impairment. Normally this doesn't affect him because he has his textbook, but in Maths the teacher writes on the board.

### Task 2. Tell the trainees to look at Kamari's IEP.

Description of learning difficulty
Kamari does not participate in Math's lessons. He is falling behind his classmates. He may have a visual impairment.
Name: Kamari
Age: 6
Class level: Primary one 1
Date of assessment: 20 <sup>th</sup> August 2025

Goal	Plan of action	Target date	Evaluation
Kamali will participate in Math lesson	1. Kamari will sit at the front of the class 2. Teacher will write large numbers on the board and say the problems aloud 3. Kamari will be given small objects that he can touch to use to count with (e.g. small stones) 4. Teacher will talk to Kamari's parents and suggest they take him to the Kabgayi Eye Hospital to see if he has problems with his eyes 5. Teacher will sit Kamari next to a student who is good at Maths. That student will	In three months time (Kamari will participate in Maths lessons (by 21 <sup>th</sup> November 2025)	15 September 2025- Kamari had an eye examination and the doctor said he has a visual impairment and needs glasses  10 <sup>th</sup> October 2025- Kamari's parents buy his glasses  15 <sup>th</sup> November 2025- Glasses are helping Kamari. He no longer bumps into furniture  30 <sup>th</sup> November 2025 – Kamari is participating in Maths lessons but is still behind her classmates. He may need extra help.
Column 2 (Specific Objectives)			
Column 3 (student, parent, teacher, school responsibility)			

Sample of the IEP used in Rwandan schools: please refer to the annex 4.

# UNIT 5

## APPLICATION OF THE UNIVERSAL DESIGN FOR LEARNING (UDL) APPROACH



### Learning objectives

By the end of this unit, trainees should be able to:

- Explore the three core principles of UDL;
- Get practical tips to include UDL strategies in lesson planning, delivery and assessment.



### Introductory Activity

#### One size fit all

In a P6 classroom, in a science class learning about “photosynthesis”, Ms. Donatha delivers the content using PP slides and a worksheet, expecting all learners to take notes and complete written tasks. However, some students are struggling to cope with the work including Diane who struggles to grasp the complex vocabulary and dense text; Fiston, who finds it difficult to maintain attention during the lengthy, passive lecture; Paul, who faces frustration and delays trying to read and write on the worksheet; and Sophie, a gifted learner, quickly finishes the work and becomes disengaged due to lack of challenge. When marking the sheet, Ms Donatha found out that these particular learners failed the task.

#### Questions:

1. Is the approach used addressed the diverse learning needs of learners? If no why?
2. As a teacher, what could you do differently to respond to the needs of these learners?
3. Offer suggestions to Ms. Donatha on how she can improve her lesson.

#### 1. Definition

UDL is a flexible teaching framework that recognizes learners' diverse needs and preferences. It emphasizes that no single method suits all students, and effective instruction must offer multiple means of engagement, representation, and expression. To explore this diversity, educators begin by reflecting on their own learning experiences and discussing how individual preferences shape learning. Drawing on Gardner's theory of multiple intelligences, UDL encourages teachers to design lessons that accommodate linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalistic intelligences.

By applying these principles, classrooms become inclusive environments where every student can access content, participate meaningfully, and demonstrate understanding in ways that align with their strengths.

## **2. Understanding UDL (please refer to the introductory activity above)**

The classroom scenario with Ms. Donatha highlights the limitations of a “one-size-fits-all” teaching approach. By relying solely on PowerPoint slides and worksheets, she unintentionally excluded learners with varying needs—Diane struggled with complex vocabulary, Fiston couldn’t stay focused during passive instruction, Paul faced difficulties with reading and writing, and Sophie, a gifted student, lacked challenge and became disengaged. This approach failed to address the diverse learning profiles in her class.

Universal Design for Learning (UDL) offers a solution by promoting flexible, inclusive teaching strategies that accommodate individual differences. Grounded in cognitive neuroscience, UDL identifies three key brain networks involved in learning: *affective* (engagement), *recognition* (representation), and *strategic* (action and expression). By designing lessons that offer multiple means of accessing content, engaging with material, and expressing understanding, teachers can better support all learners—not just those with disabilities. For Ms. Donatha, applying UDL might involve using visuals, simplified texts, hands-on activities, peer collaboration, and tiered tasks to ensure every student is challenged and supported.

## **3. The three principles of UDL**

Universal Design for Learning (UDL) is built on three core principles that support inclusive and effective teaching by recognizing the diverse ways learners engage with content, process information, and express understanding.

- a) Multiple means of engagement focuses on motivating learners through varied approaches. Teachers can offer choices in content, levels of challenge, and modes of participation. For example, in a history lesson on the 1994 Genocide against the Tutsi in Rwanda, students might choose between reading, watching documentaries, listening to testimonies, or discussing reconciliation efforts—ensuring each learner connects with the material in a meaningful way.
- b) Multiple means of representation ensures that information is presented in varied formats to suit different learning styles. In a biology lesson on the digestive system, students might learn through diagrams, videos, group discussions, hands-on modeling, or reading and summarizing—making the content accessible to visual, auditory, and kinesthetic learners.
- c) Multiple means of action and expression allows students to demonstrate their knowledge in diverse ways. In a math lesson on addition and subtraction, learners

might solve problems in writing, use physical objects, draw visual stories, or explain solutions verbally—giving each student the opportunity to succeed using their strengths.

#### **4. Practical UDL strategies in inclusive classrooms**

Universal Design for Learning (UDL) empowers teachers to meet diverse learner needs by applying three key principles: engagement, representation, and expression. In inclusive Rwandan classrooms, where learners may face hunger, learning difficulties, or varying abilities, motivation can be enhanced through interactive routines, real-life objects, games, role-play, and learner choice. Teachers present content using multiple formats (visuals, audio, physical items, and digital tools) to ensure accessibility for all. To support varied expression, learners are encouraged to demonstrate understanding through writing, drawing, speaking, or hands-on activities. These strategies foster equity, inclusion, and active participation across primary and secondary education.

#### **5. Practical use of UDL in Inclusive lessons**

Universal Design for Learning (UDL) offers practical strategies to create inclusive lessons that accommodate diverse learner needs. In lesson planning, teachers are encouraged to set flexible goals and use varied materials, such as storybooks, visuals, audio, and digital tools, to ensure accessibility. For example, instead of requiring an essay, students might express understanding through stories, posters, or skits. Planning also involves anticipating challenges faced by learners with disabilities by providing large print, sign language, or tactile resources.

#### **Reflection**

During lesson delivery, UDL promotes active engagement through group work, role-play, and games. Teachers should present content using multiple formats (visual, oral, and kinesthetic) to suit different learning styles. Learners should be allowed to express their understanding in diverse ways, such as writing, speaking, drawing, or using technology. Assistive tools like tablets and audio devices can support learners with reading difficulties.

Assessment under UDL is flexible and fair, offering options like quizzes, presentations, models, or digital submissions. Frequent formative assessments and timely feedback help track progress and guide improvement. Teachers should also provide extra time or support for learners who need it, ensuring that all students have an equal opportunity to succeed.

UDL aligns closely with inclusive education practices. It shifts the focus from modifying the learner to fit the curriculum, to modifying the curriculum to fit the learner. This not only benefits learners with disabilities but enhances learning for all learners by promoting equity and accessibility (Hehir et al., 2016).



## End of unit assessment

Discuss with trainees the issue of youth unemployment in Rwanda. Tell them to propose a solution using one of the following formats:

- Written report
- Illustrated poster
- Oral presentation

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## Annexes

### Annex 1: Glossary

**Disability:** This is the partial or complete loss of use (or ability) of a certain body part or organ. This leads to a reduction or loss of function of that body part or organ. This is also a social issue, because different societies interpretabilities or disabilities in accordance to their social norms and standards. In this document, reference is made to Visual Disability, Hearing Disability, Physical Disability, Communication Disabilities, Intellectual Disabilities and Multiple Disabilities.

**Impairment:** This is the damage to a part of the body (organic system) caused by genetic factors, disease, accident or other factors, which may cause also disabilities.

**Inclusive Education:** This is the process of addressing all learners' educational needs in a mainstream education setting. It is based on the principle that all learners are different but they can learn and develop differently. Therefore, the education system is expected to be flexible and adapted to cater for every learner needs.

**Integrated education:** This is a process of addressing education of learners with special education needs within the mainstream education. It is based on the principle that all learners have the right of access to education and all learners learn differently while education system has no obligation to change the environment in order to fit their needs. The child must adapt to the existing system or fail.

**Individualized Teaching Strategies:** These are the personalized instructional approaches or methodologies that cater for the learners with disabilities and related Special Educational Needs. They involve among others, Individual Education Plan (IEP) which involve designing individualized learning and teaching goals, support provisions and resources, structured teaching approaches using adjusted or/and functional curricular, etc.

**Itinerant educator/teacher:** Also referred to as a “visiting” or “peripatetic” teachers, itinerant teachers are traveling school teachers, often specialized in certain fields of Special Needs Education, who move from school to school, providing individualized support to learners with SEN, and/or supporting their teachers.

**Mainstream schools:** Also referred as ‘Ordinary’ or ‘Regular’ schools as opposed to ‘special schools’. They are schools which educate learners that present no or minimal Special Educational Needs (SEN) and therefore do not require any exceptional educational adjustments.

**Multidisciplinary team:** This is a team of experts with different backgrounds working in complementary way in the delivery of education service or/and programming for an individual (or group of) learner(s) with Special Educational Needs. The specific roles of the Multidisciplinary team at school include (1) assessment of educational needs, (2) guiding the development of individual educational plans (IEP) and following up learners with special needs.

In Rwandan context, a multidisciplinary team in a school include the school management-head teacher, director of studies, parents, teachers, health professionals, psychologists, learners and Special needs education specialist (not exhaustive).

**Special Needs:** Special needs are any of various difficulties (such as a physical, emotional, behavioral, or learning disability or impairment) that cause an individual to require additional or specialized services or reasonable accommodations (in education or recreation). All those difficulties or challenges that a person faces and render him/her different from other average persons are referred to as “special needs” because they may demand adjustments in order to participate or access services equally.

**Special Educational Needs (SEN):** These are non-ordinary needs a learner may have in schooling as a result of intrinsic or extrinsic limitations/barriers. The learner with SEN will need extra attention / assistance from the teacher and/or the use of different educational approaches or/and tools. Special needs that have a bearing on school work and education are generally referred to as special educational needs.

**Special Needs Education (SNE):** In Rwanda, some children learn in specialized settings , due to temporary or permanent special education needs, thus in those settings teachers provide adjusted educational programs known as “Special Needs Education” (SNE). Experiences in the Rwandan context continue to indicate that the concept is largely interpreted as ‘Uburezi bw’abafite ubumuga’ or education for those with disabilities, typically intellectual, multiple disabilities, or sensory disabilities. Adapting the educational system (Teaching approaches, environment, programs, tools) and adjusting them to fit the individual needs of learners with special educational needs is what is referred to as Special Needs Education.

**Special needs education professional staff:** These are professional service providers in the field of special needs officially recruited to offer specialized services that require specialized skills. Sign language interpreters, Special Needs Education Coordinators (SNECO) and resource room technicians for example.

**Habilitation/Rehabilitation services:** Rehabilitation refers to services provided to newly persons with disabilities with the purpose of restoring some of the functionality they lost as a result of their disability. This is done mainly to help them acquire skills for independent living.

**Habilitation** is like rehabilitation except that it is a service accorded to persons who had no functional skills in the first place at the time of acquiring the disability. It is both about teaching new skills to people who never had them.

**Resource room:** This is a room/place in a school for supporting and teaching learners with SEN, equipped with specialized resources, various learning materials and support services. At times teachers also use it and other resource personnel, for other activities related to special needs education services.

**Special School:** A school that is set and organized to provide educational services to learners with specific types of Special Educational Needs. In Rwanda, there are schools specified for learners with hearing difficulties, with visual difficulties or for those with cognitive challenges, etc.

## Annex 2: Inclusivity checklist

Items	Indicators	✓
<b>School Policies and Administrative Support.</b>  <b>Your school:</b>	Has a mission and/or vision statement and policies about inclusive, learning-friendly education, including a policy against discrimination;	
	Has a master list of all children in the community, whether enrolled or not, and has individual records of why children have not enrolled	
	Conducts regular campaigns to encourage parents to enroll their children, ones that emphasize that ALL children should be enrolled and are welcome	
	Copies of documents or resources at national or regional levels that address inclusive education for children with diverse backgrounds and abilities;	
	Knows which professional organizations, advocacy groups, and community organizations offer resources for inclusive education	
	Shows in specific ways that school administrators and teachers understand the nature and importance of inclusive education	
	Has prepared a list of barriers that prevent the school from fully developing an ILFE and a list of ways to overcome these barriers	
	Is aware of and is changing school policies and practices—such as costs and daily schedules—that prevent some girls and boys from receiving a quality education	
	Provides flexibility to teachers to pursue innovative teaching methods for helping all children to learn	
	Has links with the community, is responsive to the needs of the community, and provides opportunities for exchanging ideas with the community to bring about positive changes in inclusive practices	
	Responds to needs of the staff and is not exploitative	
	Has effective support, supervision, and monitoring mechanisms in which everyone participates in learning about and documenting changes in inclusive practices, as well as in making future decisions	

<b>School Environment</b>	Has facilities that meet the needs of all students, such as separate toilets for girls and ramps (not stairs) for students with physical disabilities	
<b>Your school</b>	Has a welcoming, healthy, and clean environment	
	Has a steady supply of clean, safe drinking water and serves or sells healthy, nutritious food	
	Has (or has a plan to develop) a diverse school staff (women and men with different backgrounds in race, ethnicity, physical ability, religion, language, socioeconomic status, etc.)	
	Has staff, such as counselors and bilingual teachers, who can identify and help with the students' individual learning needs	
	Has processes and procedures in place that help all teachers and teaching staff, parents and children to work together to identify and assist with students' special learning needs	
	Focuses on teamwork among teachers and students	
	Has links with existing health authorities who provide periodic health examinations for children	
<b>Teachers' Skills, Knowledge, and Attitudes</b>	Can explain the meaning of "inclusive" and "learning-friendly" education and can give examples of ILFEs;	
	Believe that all children—girls, poor or wealthy children, language and ethnic minority children, as well as those with disabilities—can learn	
	Are involved in finding school-age children who are not in school to see that they get an education	
<b>Teachers...</b>	Know about diseases that cause physical, emotional, and learning disabilities; and can help unhealthy students to get proper care	
	Receive annual medical examinations, along with other school staff	
	Have high expectations for ALL children and encourage them to complete school;	
	Are aware of resources that are available to assist children with more individual learning needs	
	Can identify culture and gender bias in teaching materials, the school environment, and in their own teaching, and can correct this bias	
	Help students learn to identify and correct gender and culture bias in learning materials and correct it in a culturally sensitive manner	
	Adapt curriculum, lessons, and school activities to the needs of children with diverse backgrounds and abilities	
	Use content, language, and strategies in their teaching that help all students to learn	
	Can assess children's learning in ways that are appropriate to the children's abilities and needs	
	Are reflective and open to learning, adapting, experimenting, and changing	
	Are able to work as a team with other teachers, children, parents and community members, as well as education authorities	

<b>Teacher Development</b>	Attend workshops or classes on developing an ILFE classroom and school, receiving advanced professional training on a regular basis	
<b>Teachers...</b>	<p>Give presentations to other teachers, parents, and community members on developing an ILFE classroom</p> <p>Receive ongoing support for improving their understanding of subject matter content (such as mathematics)</p> <p>Receive ongoing support for developing teaching and learning materials related to ILFE</p> <p>Receive ongoing support from school administrators through regular observation and a written supervisory plan</p> <p>Have a work area or lounge where they can prepare lesson materials and share ideas</p> <p>Can visit “model” ILFE schools</p>	
<b>Students</b>	<p>ALL school-age children in the community attend school regularly</p> <p>ALL students have textbooks and learning materials that match their learning needs</p> <p>ALL students receive regular assessment information to help them monitor their progress</p> <p>Children with diverse backgrounds and abilities have equal opportunities to learn and to express themselves in the classroom and at school</p> <p>ALL children are followed up if their attendance is irregular and corrective actions are taken</p> <p>ALL children have equal opportunities to participate in all school activities</p> <p>ALL students help to develop guidelines and rules in the classroom and in the school regarding inclusion, non-discrimination, violence, and abuse</p>	

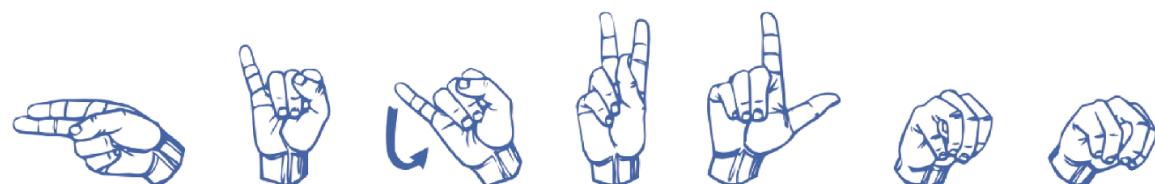
<b>Academic Content and Assessment</b>	The curriculum allows for different teaching methods, such as discussion and role-play, to meet different learning rates and styles, particularly for children with special learning needs	
	The content of the curriculum relates to the everyday experiences of ALL children in the school whatever their background or ability	
	The curriculum integrates literacy, numeracy and life skills into all subject areas	
	Teachers use locally available resources to help children learn	
	Curriculum materials include pictures, examples and information about many different kinds of people, including girls and women, ethnic minorities, people of different castes and social/economic backgrounds, as well as people with disabilities	
	Children with learning difficulties have opportunities to review lessons and improve upon them, or to have additional tutoring	
	Curriculum and learning materials are in the language's children use in and out of school	
	The curriculum promotes attitudes such as respect, tolerance, and knowledge about one's own and others' cultural backgrounds...	
	Teachers have various assessment tools to measure students' knowledge, skills, and attitudes (including student self-assessment), rather than only depending upon examination scores	
<b>Special Subject Areas/Extra-curricular Activities</b>	Children with physical disabilities have opportunities for physical play and development	
	Girls have the same access to and opportunities for physical play (such as equal time on the football field) and other extracurricular activities as boys	
	All children have opportunities to read, write, and learn in their own language when they first enter school and, if possible, continuing thereafter	
	The school shows respect for children of all religions; children have opportunities to learn about different religious traditions, as appropriate, during the school day	
<b>Community</b>	Parents and community groups know about ILFE and are able to help the school become an ILFE	
	The community helps the school reach out to ALL children who have been excluded from school	
	Parents and community groups offer ideas and resources about the implementation of ILFE	
	Parents receive information from the school about their children's attendance and achievement	

Source: EENET: *Becoming an Inclusive Learning Friendly Environment (ILFE)*, 2015

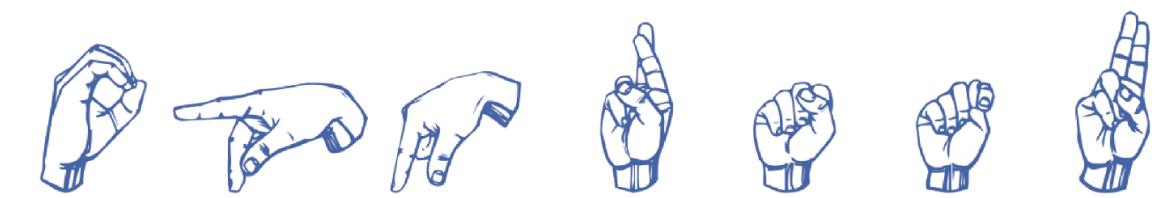
## Annex 3: Sign Language alphabet



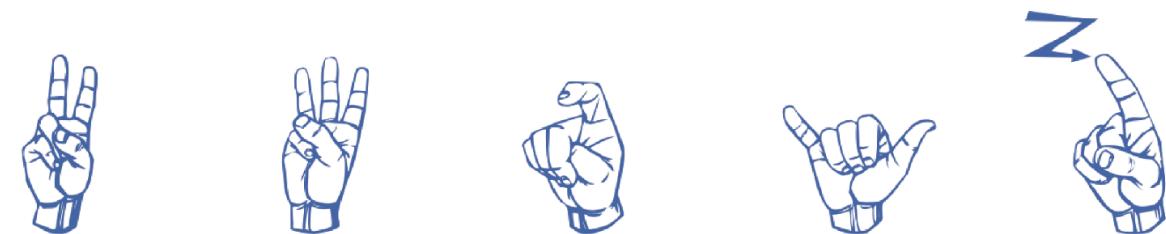
A      B      C      D      E      F      G



H      I      J      K      L      M      N



O      P      Q      R      S      T      U



V      W      X      Y      Z

## Annex 4: Individual Educational Plan

Name of the school: ..... Filled on: ..... / ..... /202.....

District: .....

Sector: .....

Cell: .....

Village: .....

Be completed by Child's class teachers in collaboration with peer teachers, parents and education professional

### I. IDENTIFICATION OF THE LEARNER WITH SEN

Names: .....

Age: .....

Gender:	Female	Male
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Class level: .....

Exceptionality: .....

### II. REASON FOR DEVELOPING THE IEP (Tick in box ✓)

1. Student identified as exceptional by the assessing team

2. Student not formally identified but requires special education program/ services, including modified/alternative learning expectations and/or accommodations

### III. THE LEARNING ASSESSMENT

Brief summary of the learner's Strengths and needs (Refer to the individual educational assessment results)

#### Areas of strengths

- 1.
- 2.
- 3.
- 4.

#### Areas of needs

**IV. REGULAR CLASS WITH INDIRECT SUPPORT FROM SNECOS AND SPECIALISTS - ASSESSMENT TEAM PLACEMENT DECISIONS (Tick in box✓)**

1. Regular class with indirect support from SNECOS and specialists
2. Regular class with pedagogical resource assistance from specialist teacher / resource room master
3. Special education class full-time at special centre

## **V. EDUCATIONAL PLAN**

## General Learning objectives:

.....  
.....  
.....

**Detailed individual education plan (It indicates the objectives clearly set, the activities to be done, the person who will be responsible, the target date for the goal to be attained and finally be evaluated)**

## IEP Planning Team

## Names

### Position/ Responsibility

**Signature**

1

2

— 10 —

Additional comments: .....



**TEACHER TRAINING MANUAL ON SPECIAL  
NEEDS AND INCLUSIVE EDUCATION ( 2<sup>nd</sup>  
Edition)**