Disorder	Definition	Prevalence and Causation	Associated Problems	form	content	use	Literacy
SLI	-Significant limitations in language functioning that cannot be attributed to: Intellectual dysfunction Hearing disorders, Oral structural or oral motor abnormalities, Neurological disorders, Social inabilities. -The DSM-5 criteria include persistent difficulties in the acquisition and use of language across modalities(i.e., spoken, written, sign language) due to deficits in comprehension or production. -An individual's language abilities must be below age expectations	-7% -SLI occurs more frequently in males than females. -A gene locus that is linked to individuals with speech and language impairments has been identified. -A child with SLI is more likely to have a family member with language impairment. -A child's environment also affects language development.	- Children with SLI need more time to process information than do children developing typically. -Children with SLI have capacity limitations in their cognitive processing resources. -The slower rate of processing results in reduced ability to rapidly name pictures and recognize words. -The rate of **nonword repetition tasks** (i.e., repetitions of nonsense words) also is reduced in children with SLI. This task depends on child's phonological short-term memory. -A higher-than-expected proportion of children with SLI are diagnosed with attention-deficit/ hyperactivity disorder (ADHD), about **two** times more likely to show ADHD symptoms than children developing typically. -Impulsivity, high activity, and distractibility. -Approximately 80% of school-age children with SLI experience reading problems-**dyslexia** -Phonological awareness deficits result in problems detecting, segmenting, and blending sounds in words, hindering children's **reading decoding.** -Children with SLI demonstrate frequent grammatical errors in their writing and have difficulty with written verb morphology.	-The morphosyntax features of language are the primary deficit for children with SLI. -They take longer time to reach the same linguistic milestones as their peers. -Morphosyntax defect (a) verb forms (e.g., third-person singular s, past tense ed, copula verbs [is, are], auxiliary verbs [is, are, do, can]). (b) articles (a, the). (c) possessive 's. (d) pronouns. -It has been estimated that up to 40% of children with SLI have phonological deficits emerge at an early age. -SLI children have smaller consonant and vowel inventories and use a more restricted and less mature variety of syllable shapes than do their typically developing peers.(CV,CCV,CVC)	Children with SLI have difficulty with vocabulary development.	-Children with SLI often produce word combinations up to **3½** years behind their peers. -Children with SLI have difficulty learning to use verbs. -Lexical problems of children with SLI relate to: (a) the additional time needed for word retrieval. (b) decreased ability to expand new object names to objects in the same semantic category. (c) the need to learn new words. **-Pragmatic difficulties:** ***Social communication problems** are limitations in an individual's social, cognitive, and language skills necessary for contextually appropriate, meaningful, and effective interpersonal communication. *Children with SLI have difficulty entering peer-group conversations. *Struggle to make conversational repairs such as clarifying their communication when there is a conversational breakdown. *Data show that many adults who were diagnosed as having SLI as children continue to experience serious problems with employment, independent living &personal relationships.	-Children with SLI enter school, they have difficulty with the more sophisticated language needed for academics. -Written language has more compound and complex sentences than spoken language. -Children with SLI have difficulty with syntactically complex sentences and use embedded clauses less often than children who are developing typically.

Special Populations	Definition	Cognitive Characteristics	form	content	use	Literacy	Language Characteristics
Intellectual disability ID	Intellectual disability is a disability characterized by significant limitations both in intellectual functioning and in adaptive behaviour, which covers many everyday social and practical skills. This disability originates before the age of 18 -**Intellectual functioning**, or intelligence refers to general mental capacity, such as learning, reasoning,problem solving, planning -This may be operationalized based on IQ test scores. -**Adaptive behaviour** comprises three skill types: **-Conceptual skills**: language and literacy; money, time, and number concepts; and self-direction. **-Social skills**: interpersonal skills, social responsibility, self-esteem, gullibility ,social problem solving, and the ability to follow rules/obey laws and to avoid being victimized. **-Practical skills**: activities of daily living (personal care), occupational skills, healthcare, travel/transportation, schedules/routines, safety, use of money, and use of the telephone. -Adaptive behaviours must be relative to the individual's cultural group.	-Slower developmental trajectory. -Pronounced deficits in executive functioning and working memory than would be expected. -EF skills were not strongly correlated with IQ scores, but that impairments in EF may be more closely associated with impairments in adaptive behavior.	-Grammatical acquisition follows a typical developmental sequence, albeit at a slower developmental pace. -Children with ID tend to use shorter, less complex sentences with fewer elaborations and relative clauses than do typical peers.	Age-equivalent vocabulary scores did not differ significantly from syntactic measures.	-Pragmatic competence in everyday situations requires the integration of cognitive, linguistic & social-emotional cues, making it particularly vulnerable in ID. -ID may be slow to develop intentional communication in the pre-verbal stages of development. -ID are less able to clarify meaning and request clarification when they have not understood utterances. -ID have considerable difficulties constructing coherent narratives	-Literacy is slower to progress for children with ID. -Children with ID initiated word reading and oral language skills which predict reading comprehension abilities less often.	-Delayed language acquisition is often one of the first signs of ID. - approximately 50% of children with nonspecific ID had language skills commensurate with nonverbal abilities. -25% had expressive language deficits relative to comprehension skills -the remainder(25%) had deficits in both comprehension and expression.

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Autism Spectrum Disorders ASD	-(ASD) to categorize individuals who have: (a) deficits in social communication and social interaction. (b) demonstrate restricted repetitive behaviors, interests, and activities (RRBs). (c) specific non-functional routines. (d) repetitive motor manners. (f) preoccupation with parts of objects. -ASD category now is an umbrella term that applies to individuals with: 1- Autistic disorder. 2- Asperger's disorder. 3- Childhood Disintegrative Disorder. 4- Any other pervasive developmental disorder not otherwise specified. -**Note**: new category called **"social (pragmatic) communication disorder**": have difficulties with social skills but do not show restricted or repetitive patterns of behavior. -Individuals with ASD must show symptoms from early childhood, even if those symptoms are not recognized until later.	-50% to 70% of children with ASD obtaining scores on nonverbal IQ measures of less than 70. -ASD is diagnosed in children with IQ ranges in the average (28%) or above average range (3%). -Executive functions (EF) are very often impaired in children with ASD. -Deficits in social cognition or in understanding other minds, are the most well-known cognitive deficits ,which is linked to: -problems learning new words. -understanding non-literal language.	-Significant proportion of children with ASD perform poorly on measures of nonsense word repetition, which taps phonological short-term memory. -Rhyme awareness is very poor. -Atypical patterns in processing speech prosody, more prominent at the sentence level than at the level of an individual word. -Distortions of speech sounds and voicing patterns. -Sound substitutions are rare. - use fewer grammatical morphemes to mark verb tense and agreement. - produce short and grammatically simple sentences -Sentence repetition also reveal poorer performance for individuals with ALI. -Impaired sentence comprehension is particularly striking in ALI.	-Vocabulary scores are consistently depressed in a large proportion of children with ASD. -Receptive vocabulary considered to be good. -The underlying organization of the semantic system in ASD is atypical and impoverished. -Individuals with ASD show slow match for semantically related words. -Individuals with ASD do not use semantic information to facilitate encoding and recall.	-Pragmatic deficits are universal within ASD. - significant deficits in conversational skills. -Demonstrating either too many or too few initiations. -Poor topic maintenance. Fewer contingent conversational responses. -Socially inappropriate utterances. -Understanding of language in context is regarded as particularly problematic. - poor understanding of figurative and metaphorical language ALI are more likely to have difficulties with higher level pragmatic language skills than ALN peers.	-Less attention has been paid to the reading abilities of children with ASD. -Some children with ASD were given the label "hyperlexia". -More recent investigations have revealed much more varied reading patterns in children with ASD. -ASD children with poor phonological skills tend to have problems with decoding text. -Language, aspects of influence literacy development. -Aspects of autistic cognition may also influence literacy development.	-Structural language skills are extremely variable in ASD. -Significant percentage of children with minimal language skills in early life develop at least some spoken language skills by the age of nine. -9% of children remaining nonverbal in later childhood. -Two different "neurocognitive phenotypes": +Autism Language Normal (ALN) phenotype. +Autism Language Impaired (ALI) phenotype.

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ADHD	-ADHD is a chronic condition that affects the child's ability to control attention and behavior in an optimal and adaptive manner. -Two components to the disorder: inattention and hyperactivity/impulsivity. -An onset before the age of 12. -Present in two or more contexts (i.e., both at home and at school). -The symptoms of ADHD must be present for at least 6 months. -Interfere with social, academic, or vocational functioning. -Prevalence rate is approximately 3% to 5% of school-aged children with boys outnumbering girls 3:1.	-The majority of children with ADHD will have nonverbal IQ scores within the normal range. -ADHD has also been observed in children with ID and children with exceptional Iqs. -No differences between children with different IQ scores with respect to severity of ADHD. -Impaired EF (mainly inhibition, working memory, and planning). -Children with ADHD find it difficult to wait for something desirable.	-There is no evidence that children with ADHD as a group have specific difficulties with phonology or speech sound production. -ADHD group did not differ from typical peers with DLDs on overall levels of verbal ability. -ADHD and DLD groups had difficulties with rapid temporal processing of auditory stimuli. -children with ADHD had greater difficulty on nonverbal tests of processing speed than DLD counterparts.	-Studies of adults with reported histories of ADHD revealed less accuracy at mapping semantic features and slower to respond to lexical labels. Children with -ADHD may have subtle difficulties rapidly accessing the lexicon or making connections between words. -Difficulties in understanding humour and non-literal language, making inferences, and understanding metaphor.	-Children with ADHD are reported to have significant pragmatic language difficulties, sometimes indistinguishable from peers with ASD. -Problems with **inappropriate initiation, interruption, difficulty maintaining a topic, and responding with appropriate amounts of information**. -Difficulties with pragmatic aspects of language have been found to mediate social skills deficits in this population.	-Rates of co-morbidity between ADHD and reading disorders (RD) are extremely high. Prevalence rates for each disorder alone is 5%. Rates of comorbid disorder are 25% to 40%. -Deficits in EF can adversely affect reading tasks. -Child's disruptive behavior can have implications for the learning environment. -Level of maternal education has been associated with reading outcomes for children with ADHD.	-language profiles are variable. -rates of co-morbidity are higher than would be expected in the general population -when language impairments and speech sound disorders occur together that there is an increased rate of co-morbid ADHD -relationship between DLD and ADHD is a matter of debate: -the two disorders may have at least some biological risk factors in common(neural circuits in the frontal lobe overlap in both ADHD and language production. -cognitive and behavioral deficits associated with ADHD can disrupt language learning and/or language processing.

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Down syndrome DS	-Down syndrome (DS) is the most common genetic cause of intellectual disability, -occurring in approximately 1 in 700 live births -DS results from an extra (third) copy of chromosome 21 (which is why it is sometimes referred to as trisomy 21). -Increasing maternal age significantly increases risk of Down syndrome. -Down syndrome is characterized by mild to moderate ID 40 and 70	-hypotonia (low muscle tone), distinctive facial features such as microgenia (abnormally small chin), round face, macroglossia(protruding or oversized tongue), epicanthal fold (fold of skin on the eyelid), short stature and shorter limbs& hyperflexibility of joints -DS is also associated with a number of health concerns including a higher risk for congenital heart defects, gastroesophageal reflux disease, recurrent ear infections, obstructive sleep apnea, and thyroid disfunction -Co-morbid autism is diagnosed in 10% of children with DS. -DS are at greatly increased risk of experiencing early onset Alzheimer's disease.	-Speech intelligibility in DS is poor relative to cognitive ability. -Most speech sound errors are developmental in nature (e.g., cluster reduction and final consonant deletion, vowel distortions and inconsistent pronunciations. -Apraxia of speech has also been reported in DS -Syntactic comprehension is characterized by slowed growth and even decline in late adolescence -DS produce shorter and less complex sentences and fewer question/negation forms than typically developing peers. Particular -limitations in tense marking (past tense –ed; third person singular –s) similar to children with SLI	-Acquisition of first words in DS is significantly delayed and subsequent growth of expressive vocabulary is slower than expected. -There is some evidence that gesture is preferentially used by young children with DS and supports vocabulary comprehension. -word learning and vocabulary growth may be affected by limitations in phonological short-term memory.	-Early joint communicative behaviors such as mutual eye contact, vocalizations, and dyadic interactions with caregivers may be delayed or less coordinated -By the age of two, infants with DS catch up, with many children with DS showing more social-interactive behaviors than TD peers -Narrative skills of children with DS also reflect a good conceptual understanding of the story. -children with DS provided fewer elaborative utterances in conversational turns relative to peers matched for nonverbal ability instead providing minimally adequate replies. -DS are less likely to signal non-comprehension of language or request clarifications in referential communication tasks	-like other aspects of language development, literacy development in DS follows protracted. -Individuals with DS are more likely to have profile similar to that of "poor comprehends" in which word reading abilities outstrip reading comprehension skills -Poor reading comprehension was associated with levels of oral language comprehension	Expressive language is more severely impaired than receptive language abilities

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HI	-Many (HI) children score within the normal range on appropriate tests of nonverbal reasoning. -Approximately 30% of children with moderate to profound losses have additional medical conditions that may adversely affect cognitive development.	-Majority of deaf children are born to hearing parents Who do not know Sign and May not even be immediately aware that their child has a hearing impairment. -Within Signing communities, there are individual differences in language competence Until recently we have lacked linguistically and culturally appropriate assessment instruments. -Improvements in universal screening of hearing of newborn infants mean that hearing impairment is now identified at birth. -FDA approved cochlear implantation for children as young as 12 months in year 2000.	-early speech sound inventories and patterns of babbling observed in children with HI are different from those of hearing children. - In (CI) cases once words are acquired, the sequence of phonemes learned is roughly similar to that of hearing children, though protracted in development. -Children with HI are more likely to produce voicing errors, extra nasality, and initial syllable omission. -Many children with severe and profound hearing losses will have lower levels of speech intelligibility. -Spoken language morphology and syntax have long been recognized as particularly challenging for children with HI. -rate of MLU growth is slower than that seen in NH children -It appears that age of (CI) implantation or level of residual hearing can dramatically influence growth, in this case earlier definitely better. -Many children fail to acquire the typical range of morphemes used in English. -Children with HI (including CI users) may rely more on semantic/conceptual cues than purely grammatical markers in developing morphology -Children with primary DLD, children with HI are able to mark plural –s with little difficulty but are more likely to omit third person singular –s. -Children with HI are significantly delayed in their acquisition of complex grammatical structures	-Overall, there is some evidence that vocabulary levels may be delayed in HI. CI use can alter the developmental trajectory such that children achieve typical levels of receptive vocabulary -Language revealed similar growth curves and patterns of vocabulary development, and indicated that predictors of language growth in Signing HI children are similar to those seen in NH populations, namely maternal education and maternal language input -Children with HI have more difficulty labelling new referents and recalling the label after training	-early exposure to language and communication in socially meaningful contexts is more important than hearing status per se. - non-native signers were less successful than hearing peers on referential communication tasks, but that performance was associated with working memory, rather than social cognition.	-Literacy outcomes for children with HI have changed dramatically with the introduction of CI. -It has also been the case that the gap between HI and NH readers has increased over time; a delay of 1 year at age 8 can become a 4-year delay at age 14 -There is evidence that CI use can result in near normal levels of reading comprehension, though others have reported continued deficits in reading and spelling in adolescents with HI -children with HI exhibit more emergent literacy behaviors when they are provided with engaging, print-rich environments at home and at school, and when their early attempts at writing in these environments are similar in form and content to NH peers. -Exposing children with HI to books and stories, demonstrating the uses of writing in everyday activities, and providing attractive writing materials and opportunities will be useful in this population, as in others.	-In profound hearing losses, what language the child will learn and when he or she will learn it. -Deaf children born to deaf parents are likely to learn American Sign Language and will have exposure to this language from the earliest opportunity. -Members of Deaf have developed a rich culture and fulfilling social world for members of the community.