

Evidence-based support for children and young people with additional needs

The Roadmap



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Abbreviations

- AAC Alternative and Augmentative Communication
- ABA Applied Behaviour Analysis
- ADHD Attention Deficit Hyperactivity Disorder
- AHP Allied Health Professional
- ALP Analytic Language Processor
- ASD Autism Spectrum Disorder
- ASL American Sign Language
- AuDHD – the combination of the autism ADHD neurotypes in an individual
- Auslan Australian Sign Language
- Ax Assessment
- BSL British Sign Language
- CALD Culturally and Linguistically Diverse, Cultural and Linguistic Diversity
- CAM Complementary and Alternative Medicine
- CAS Childhood Apraxia of Speech
- CD Childhood Dysarthria
- CDS Child directed speech
- CI Cochlear implant
- CLP Cleft Lip and Palate
- CNS Central Nervous System
- CP Cerebral palsy
- CP Cleft Palate
- CPD Continuing Professional Development
- CWHL Children/child with hearing loss

CYP Children and Young People
DCD Developmental Coordination Disorder
DLD Developmental Language Disorder
DPD Developmental Phonological Disorder
Ds Down syndrome
DSM-5-TR Diagnostic and Statistical Manual of Mental Disorders Fifth Edition, Text Revision
EALD English as an additional language or dialect
EBE Evidence based education
EBP Evidence based practice
EIP Evidence informed (education) practice
FASD Foetal alcohol spectrum disorder
FC Facilitated Communication
GLP “Gestalt Language Processing”, “Gestalt Language Processor”
HA Hearing aid
HCP Health Care Professional
HoH Hard of hearing
ID Intellectual disability
IDD Intellectual developmental disorder (DSM-5-TR)
IEP Individual Education Program
IFSP Individual Family Service Plan
IMRaD Introduction, Method, Results and Discussion
IQ Intelligence Quotient
ITE Initial Teacher Education
KP (feedback) Knowledge of performance (feedback)
KR (feedback) Knowledge of results (feedback)
LD Learning disability
MSD Motor speech disorder
ND Neurodiverse, Neurodiversity
NIPD Non-invasive pre-natal testing
NLA “Natural Language Acquisition”
NVLD Nonverbal Learning Disorder
NZSL New Zealand Sign Language
OME Oral motor exercises
OME Oral musculature examination
OME Otitis media with effusion
OT Occupational Therapist/Occupational Therapy
PA Phonemic awareness
PAMs Professions allied to medicine
PA Phonological awareness
PGC Phoneme Grapheme Correspondence
PKU Phenylketonuria
PML Principles of motor learning
PR Peer review
PR Percentile rank
PT Physiotherapist/Physiotherapy; Physical Therapist/Physical Therapy

PVM Place-Voice-Manner
PWC People/Persons/Person who clutters
PWHL People/Persons/Person with hearing loss
PWS People who stutter / Person who stutters
RCT Randomized Controlled Trial
RPM Rapid prompting method
RR Reading Recovery
RTI Response to intervention
SD Standard deviation
SGD Speech generating device
SLCN Speech language and communication needs
SLD Specific learning disability
SLI Specific Language Impairment
SLP Speech-Language Pathologist/Pathology
SLT Speech and Language Therapist
SM Selective mutism/Selectively mute
SMD Speech Motor Delay
SSD Speech Sound Disorder
SSP Systematic synthetic phonics
STM Short-term memory
SVR Simple view of reading
TCM Traditional Chinese medicine
ToM Theory of mind
Tx Treatment
URTI Upper respiratory tract infection
VPD Velopharyngeal Dysfunction
VPI Velopharyngeal Incompetence
VPI Velopharyngeal insufficiency (VPI)
WL Whole Language
WNL Within normal limits
ZPD Zone of proximal development

Acronyms

AHPRA Australian Health Practitioner Regulation Agency
ASHA American Speech-Language-Hearing Association
HCPC Health Care Professions Council
IASLT Irish Association of Speech & Language Therapists
ICD-11 International Classification of Diseases (WHO) 11th Revision
ICF International Classification of Functioning Disability and Health (WHO)
NHS National Health Service (UK)
NORD National Organization for Rare Disorders
NZSTA New Zealand Speech-language Therapists' Association
RCSLT Royal College of Speech & Language Therapists
SAC Speech-Language & Audiology Canada
SPA Speech Pathology Australia
WHO World Health Organization

Ableism (Noun) **Ableist** (Adjective) A sometimes unconsciously biased view that people with disorders are imperfect and must be fixed, to make them “more normal” with behaviour approved by mainstream society. Also includes assumptions about what neurodiverse people can or cannot do and do and do not need.

Acute Something that has a known, often sudden onset, runs its course, and then subsides, e.g. a bout of tonsillitis. See **chronic**.

Aetiology (UK) **Etiology** (US) The identification of a cause, origin, or reason for something.

Allied Health Professional (AHP) People who usually work, with their technical and support staff, in healthcare teams, or independently in metropolitan, rural and remote sites. They are audiologists, behaviour analysts, dietitians, music therapists, occupational therapists, oral health practitioners, orthoptists, psychologists, physiotherapists, podiatrists, social workers, and SLPs/SLTs. AHP’s workplaces include charities, community health agencies, hospitals, people’s homes, private practices and schools. Usually, AHPs are university graduates. They are eligible (or compelled) to join a professional association, or to register with a body such as the Health and Care Professions Council (HCPC) in the UK or the Australian Health Practitioner Regulation Agency (AHPRA). They must meet rigorous standards of practice and continuing professional development (CPD), conforming to a code of ethics which involves adherence to evidence-based practice. Many AHPs attain advanced qualifications, in their specialty or in related fields. Non-medical professionals who bear the title “doctor” have a doctorate, (e.g., AuD, DPhil, EdD, or PhD) from a recognized university, requiring three or more years of postgraduate study and supervised research experience.

Allistic A neurotypical individual; non-autistic.

Alternative and Augmentative Communication (AAC) Ways of communicating besides talking. Individuals can use AAC, temporarily (e.g., after surgery), all the time (if they are non-speakers), or part of the time (e.g., autistic people who talk only when they are comfortable doing so), or to aid intelligibility (e.g., people with dysarthria who speak unclearly). *Alternative* means to use instead of speech. *Augmentative* means to use alongside speech. Low-tech AAC can include gestures, signs, and facial expressions, writing, drawing, spelling by pointing to letters (e.g., with eye-gaze), and pointing to pictures. High-tech options include apps (software) installed and run on a computer, tablet, smartphone or other electronic devices or dedicated speech generating device (SGDs). An AAC system involves all the tools of this kind that a person uses.

Analytic phonics (embedded phonics) An approach to teaching word identification (decoding) to novice readers that relies on small “chunks” of words, rather than the more fine-grained elements of phoneme-grapheme correspondence that are used in systematic synthetic phonics instruction. For example, students might be asked to focus on the rime (word part) “-ig” and then on various “onsets”, such as “b”, “p”, “w”, and so on (to make “big”, “pig”, “wig”, “dig”, “fig”, etc. This is better than diverting children’s eyes away from the text to look at pictures and guess, but not as efficient as teaching them to decode through the word (see **systematic synthetic phonics instruction**).

Ankyloglossia (tongue-tie). A congenital condition in which the lingual frenulum is short, resulting in reduced tongue mobility.

Aphonia Complete loss of voice. See **dysphonia**.

Applied Behaviour Analysis (ABA) The application of the science of behaviour analysis to difficulties that individuals have with everyday socially significant, behaviours. Practitioners are called Behaviour Analysts.

Aphasia/Dysphasia Disruption to established expressive and/or receptive language skills because of a neurological episode, for example, a stroke, some progressive dementias, and some types of brain tumour.

Articulation The coordinated movement of the body structures (head, neck, and lungs) and physiological systems (breathing) involved in the production of speech sounds.

Attention Deficit Hyperactivity Disorder (ADHD) A neurodevelopmental difference that can occur with or without hyperactivity and affects some combination of an individual's focus, attention, impulse-control, and/or ability to suppress restlessness. ADHD is present in the developmental period but is sometimes not diagnosed until adolescence or adulthood.

Audiogram A graph of hearing thresholds measured in decibels hearing level (dB HL) as a function of speech frequency (pitch) measured in Hertz (Hz). All children with hearing and/or speech and/or language issues require an audiogram and a tympanogram. If problems are identified, these measures must be repeated over time.

Audiologist An HCP who provides non-medical assessment, advice, treatment, education, and interventions for people with hearing, communication, and balance problems. See: <http://tiny.cc/fbaqzz>

Autism (also called Autism Spectrum Disorder: ASD) A lifelong neurodevelopmental difference typified by variations in verbal and nonverbal social communication, differences in establishing social connections, and specialised strong interests and behaviours.

Balanced literacy An attempted "happy medium" compromise developed in the early 2000s, to try to make decades of tension between whole language and so-called phonics-based instruction disappear. Definitions vary widely, as does its application in classrooms. Notably, explicit and systematic teaching of decoding is not a feature of this widely used collection of approaches. See also, **Whole language**

Behaviour Analyst A health care professional who practices in ABA.

Big five (personality traits) The qualities of openness, conscientiousness, extroversion, agreeableness, and anxiety.

Big five (reading) The essential components for beginning readers comprising the need explicit instruction in **phonemic awareness**, **phonics**, **fluency**, vocabulary, and comprehension.

Big six (reading) The Big 5 plus oracy. Some reading scientists argue that we should refer to the Big Six, by adding oracy (oral language skills). This is debateable, given that all the other five already pertain to various aspects of oral language.

Bottom-up reading instruction Reading instruction that starts with fundamental skills, such as the linking of phonemes and graphemes, and teaching skills of blending and segmenting sounds, to encourage mastery of a set of transferable skills for decoding unfamiliar words. These skills are then built upon through the addition of advanced language comprehension competencies. See **Top Down**.

Camouflaging (see **Masking**)

Child directed speech (CDS) / “motherese” / “parentese” / “baby talk” Exaggerated speech patterns used by parents or caregivers to communicate with young children, particularly infants. It is generally used to engage the child’s attention and maintain it for a little longer. It involves simplified vocabulary, melodic pitch, increased repetition and a slow or deliberate speech rate. It can include made-up words, nonsense words, and words and phrases unique to the child’s family. Its use is to be encouraged as it makes it easier for babies and young children to focus on important parts of the spoken language(s) they are learning.

Central Nervous System (CNS) The brain, brainstem, and the spinal cord and the nerves (incoming and outgoing) they contain, including the cranial nerves, which serve the head and neck regions.

Children and young people (CYP)/youth For statistical purposes, the United Nations (UN) defines **youth**, as persons aged from 15-to-24 and **children** as persons under the age of 14. We note that Article 1 of the UN Convention on the Rights of the Child defines “children” as persons up to 18 years. The UN did this intentionally, hoping to provide protection and rights to as large an age-group as possible and because there was no similar UN Convention on the Rights of Youth. Within the “youth” category, the UN distinguishes between teens (13-19) and young adults (20-24), because the sociological, psychological and health problems they face may differ. The WHO defines **adolescence** as the phase of life between childhood and adulthood, from ages 10 to 19.

Childhood Apraxia of Speech (CAS) is a motor speech (movement) disorder (MSD) affecting the central nervous system. It is a neurodevelopmental difference that impairs the planning and programming of speech movements. Previously called Developmental Verbal Dyspraxia (DVD), especially in the UK and New Zealand, and to some extent in Australia, but this term is falling into disuse.

Childhood dysarthria (CD) (Developmental Dysarthria). An MSD caused by a CNS disruption in the cranial nerves. This disruption impedes the accurate execution of a speech motor plan at the correct speed because neurological signals are not properly transmitted to the speech muscles. This results in speech that is imprecise, slow, sometimes breathy or effortful, and often inconsistent, indistinct and hard for listeners understand. CD is commonly associated with cerebral palsy.

Cerebral Palsy (CP) A neurodevelopmental disorder that is present at birth and results in varied combinations of movement disorders that can affect speech, upper and lower limbs, and trunk control. Muscle tone may be increased (spasticity) or decreased (flaccidity) and coordination problems may be present (ataxia). Its severity varies from mild to extremely severe.

Chronic A condition that exists long term. It may be managed, to reduce its impact, but does not go away. See **acute**.

Classical conditioning A form of learning (not always conscious) in which two stimuli or events come to be paired with each other by association. For example, a blue and white check pattern often worn by a surly and unpleasant relative during your childhood may forever spontaneously evoke the negative feelings that were felt by you as a child.

Cleft Lip and/or palate A congenital condition where there is a split or division in the lip (cleft lip) and hard and/or soft palate (cleft palate). Clefts may be unilateral (one-sided) or bilateral (2 sided).

Compensatory errors (compensatory misarticulations) Placing the articulators incorrectly to produce speech sounds.

Community of Practice (CoP)/ Communities of practice (COPs) A formal or informal supportive grouping of professionals with a shared interest in improving knowledge and skills in particular areas of their work. Meetings may be face-to-face or online, regular or sporadic.

Congenital (condition) A condition that develops in utero (i.e., before birth) and usually becomes apparent after birth, unless it is detected via pre-natal screening.

Cluttering A complex neurodevelopmental disorder in which the person who clutters (PWC) sounds too fast to the listener because their speech is unclear, happens in spurts, and/or is disorganised. Speech rate is rarely faster than is typical, but it is too fast for the PWC to manage *and* speak clearly.

Cochrane Review (see also systematic review) A systematic review of research in health care and health policy that is published in the *Cochrane Database of Systematic Reviews* <https://www.cochranelibrary.com/about/about-cochrane-reviews>. Cochrane Reviews are widely regarded as high-quality and reliable. They consider both quantitative and qualitative evidence relating to diagnosis, interventions, and prognosis.

Cognition A collection of mental processes including, attention, thinking, reasoning, problem-solving and self-awareness in humans.

Cognitive bias The tendency of all humans to hold certain beliefs (about themselves, other people, and the world) of which they may not be consciously aware. Cognitive biases can make our thinking more efficient in some situations but can also mean we filter out information that does not fit with our preconceived ideas. This may prevent us from updating our views based on new information.

Complementary and Alternative Medicine (CAM) Non-evidence-based, non-medical interventions that rely on “belief” rather than science, including (1) biologically based practices involving herbal and other nutrient and non-nutrient substances e.g., aromatic essences, oils, vitamins and minerals, that may be used in aromatherapy, naturopathy and homeopathy (2) mind-body therapies that include support groups and counselling delivered by people without formally accredited training (3) manipulative and body-based practices such as acupuncture, “body work” chiropractic, craniosacral therapy, kinesiology, and osteopathy (4) energy therapies, for instance, Pulsed Magnetic Field therapy, Qigong, and Reiki (5) traditional and holistic medical systems like Anthroposophy, Ayurveda, and Kanpō.

Complex code (See also **simple code**) A term used by some reading scientists and early years teachers to describe those elements of the English writing system that are less transparent, especially for novices, e.g., the word “right” (as opposed to “rite”).

Conductive hearing loss Impaired hearing associated with problems with the structure or function of the outer or middle ear, e.g., “glue ear” and recurring otitis media.

Consonant (reading, writing and spelling) In English, all alphabet letters except vowels (Aa, Ee, Ii, Oo, and Uu), are consonants, **noting** that the consonant Yy also does the job of a vowel within at the end of, and occasionally at the beginning of some words. See **vowel**.

Consonant (speech) A speech sound produced with constriction in the vocal tract (in contrast to vowels) e.g., [p] and [t] in “pat”. A consonant cluster (blend) is made up of two or three consonants e.g., [sp] in “spat” and [spl] in “splat”.

Consonant Chart A chart containing, in phonetic symbols, all the consonants across all known languages, standardized by the International Phonetics Association (IPA). The IPA updates the chart periodically and this is the 2020 version of the full chart:

https://www.internationalphoneticassociation.org/IPAcharts/IPA_chart_orig/pdfs/IPA_Kiel_2020_full.pdf

Constructionism theory A learning theory developed by Seymour Papert who built on Jean Piaget’s (b. 1896; d. 1980) principles of constructivism. It asserts that people learn most effectively by actively constructing knowledge through direct experiences. Key components are “learning by doing”, “knowledge construction”, and collaborative learning. It has been influential in education, especially in areas like project-based learning, maker education, and integrating technology in the classroom. Related to constructivism, a philosophy of education that favours student-led, discovery-based learning, rather than explicit teaching.

Critical thinking The ability to assess a situation or problem analytically, drawing on background knowledge, problem-solving, and willingness to question and test one’s own prior assumptions and possible cognitive biases.

Decodable texts / Decodables /phonically controlled texts Instructional texts that are used in early years classrooms where children are being taught to read using systematic synthetic phonics (SSP). These texts focus on aspects of the writing code that have been taught, so children have opportunities to practise and achieve adequate fluency (accuracy and rate). A small number of high-frequency words (of varying levels of decodability) should be taught to beginning readers to support their fluency with decodable texts, e.g., “the”, “I”, “they”.

Decode The process by which readers (especially in the beginning phases) “lift a word off the page” using their knowledge of phoneme-grapheme correspondences. This should become increasingly automatic, so that children’s attention is on deriving meaning from the text, not on sounding out unfamiliar words (which will still need to happen from time to time, even for skilled adult readers).

Delayed Language Development A descriptive term usually applied to children aged 0-to-4 who are “late talkers” with slow acquisition of language milestones, often signalled by small vocabularies (fewer than 50 spoken words on their second birthday) and poor language comprehension.

Dependent and independent variables The dependent variable is the thing that is measured by researchers (e.g., rate of children’s vocabulary growth). An independent variable is the variable that is changed or manipulated by the researcher in a scientific experiment, to test its influence on the dependent variable. It could, for example, be a therapy or teaching approach. As the experimenter changes the independent variable, the effect on the dependent variable is observed and recorded, and conclusions are drawn about possible cause-effect relationships.

Developmental Coordination Disorder – A term used in DSM-5-TR that is essentially synonymous with dyspraxia. DCD affects fine motor (e.g., writing) as well as gross motor (e.g., jumping and balancing) skills and is associated with delayed motor milestones. Physical conditions such as cerebral palsy and impaired vision should be considered in the diagnostic process.

Developmental Disorders Conditions that become apparent in infancy (e.g., Down syndrome) or in childhood (e.g., reading disorder; developmental language disorder [DLD]) and continue (e.g. autism, cerebral palsy; childhood apraxia of speech [CAS]; foetal alcohol spectrum disorder [FASD]; Fragile-X syndrome; intellectual disability;) or tend to continue (e.g., developmental coordination disorder [DCD]) throughout the person’s life. Certain developmental disorders sometimes resolve without professional intervention (e.g., stuttering/stammering), or are eliminated with effective treatment (e.g., phonological disorder) or managed to the point that they do not present major day-to-day difficulties (e.g., ADHD; CAS).

Developmental Language Disorder (DLD) A term for a language disorder that is not associated with autism, intellectual disability, or any other known biomedical condition. DLD’s prevalence is 7 percent so it is less common than Language Disorder with a prevalence of 10 percent. (see **language disorder**).

Diagnostic and Statistical Manual of Mental Disorders 5th edition, Text Revision (DSM-5-TR) A reference book published by the American Psychiatric Association of definitions, containing diagnostic features and criteria that are used to guide psychiatric and developmental disorder diagnostic processes, and treatment recommendations, by specialist medical practitioners, often in consultation with AHPs or other HCPs. The purpose of the text revision was to clarify ambiguities in the DSM-5 and to note minor changes to the diagnostic categories.

Differentiated instruction A teaching method that emerged as inclusive education practices developed to the point where the range of students in a mainstream class could be strikingly diverse. Among the students with “typical” support needs may be those who are gifted and talented, as well as children with intellectual disabilities (ID), specific learning disability (SLD), developmental language disorder (DLD), autism, physical challenges, and/or sensory impairment (e.g., hearing and/or vision impairments). Student ages in a classroom may also span a range of 18 months to two years in some education settings. A differentiation approach sees teachers accommodating and responding to important differences among individuals, offering on-the-spot support, sustaining high expectations of all the students, and employing evidence-based teaching methods to maximize learning. This combination, done well, lessens the need for extensive intervention because it ensures that, from the outset, nearly all the students in the class understand the concepts, information and skills being taught. Academics, teachers, and clinicians may differ (within and between themselves) on what differentiation entails in practical terms, which students “need” it, and to what extent.

Discourse Connected talk of various forms, e.g., conversation, narrative (sharing stories, personal or fictional), procedural (explaining how something is done) and expository (talking about a particular topic, usually in an academic context). Conversation is interactive and the other discourse genres sit on a continuum from monologue to being embedded in conversation.

Dysarthria (see **Childhood Dysarthria**)

Dysfluency (UK) **Disfluency** (US) (reading). Oral reading that is marked by inadequate rate (words per minute) and accuracy of decoding. This results in reading aloud that is slow, hesitant and disrupted by pauses, hesitations, repetitions, and errors. A child who is not a fluent reader will have difficulty understanding what they are reading.

Dysfluency (UK) **Disfluency** (US) (speech) Interruptions to the flow of speaking with some combination of atypical rate and rhythm, repetitions of sounds, syllables, words, and phrases; sound prolongations; and blocks. (see **fluency disorder**).

Dyslexia (see **Reading difficulties**) A severe and persistent difficulty in accurate and fluent word reading. Diagnostic protocols vary considerably. Opinions differ on whether this term should be reserved for certain subgroups of struggling readers (our preference is that it should not).

Dysphonia A voice disorder that occurs when the loudness, pitch, quality, or consistency of a person's voice departs from the normal range for their age, gender, culture, or speaking environment, or is effortful, and/or interferes with the speaker's communicative success. (see **aphonia**).

Dyspraxia (see also Developmental Coordination Disorder) – a neurologically-based disorder that interferes with skilled movement (speech and/or fine and gross motor) in the absence of muscle weakness.

Echolalia The immediate or delayed involuntary, or repetitive, echoing of words, phrases, or sounds spoken by oneself or others in various contexts (e.g., in person, on TV, in movies, etc.). It is often seen in young children as a part of typical language development. It is also a characteristic behaviour in individuals with neurodevelopmental differences, such as autism, and Tourette syndrome (and in some individuals with certain types of schizophrenia). Echolalia can serve different purposes depending on the context. Sometimes, it is used to communicate or process language, especially by individuals who find direct language use challenging. While echolalia may appear purposeless or “uncommunicative”, it can sometimes enable neurodiverse people to express themselves, understand language, or seek comfort.

Elaboration Adults elaborate on a child's utterance when they add in new information not stated by the child, e.g., the child says, “Mummy go to shop”, the father replies “Yes, Mummy's gone to the shop. She's going to buy some apples. What else should she buy?”.

Embedded phonics (see **analytic phonics**)

Ethics (Professional) Documented codes of conduct available to the public explicitly stating individual professionals' and professional organizations' obligations, standards of practice and guiding principles. These standards are specific to the profession's aims and goals, helping practitioners to coordinate their actions or activities and establish public trust.

Ethics (Research) Ethical norms (usually at a national level) that protect participants who take part in research. Key principles are justice (fairness of research burden), beneficence (doing good), non-maleficence (avoiding harm), and integrity (transparency and honour in all processes).

Etiology (see **aetiology**).

Etymology The scientific study of the origin and evolution of the meaning(s) of words across time and geographical regions, including their constituent phonemes and morphemes, spelling, and pronunciation.

Evidence based education EBE / **Evidence Informed (Education) Practice** EIP The use of well-designed, clearly reported, peer-reviewed scientific studies to establish which education and clinical practices and procedures are most efficient and effective, and for which groups.

Expressive language The human ability to convey thoughts, wishes, ideas, emotions and information through speech, writing, and/or gesture (see **Receptive language**).

Evidence-based practice (EBP, E³BP, E⁴BP) A decision-making approach used in various fields, particularly in healthcare, education, and human services, that integrates: 1. The best available research evidence drawn from well-designed and rigorous studies, including clinical trials, systematic reviews, or meta-analyses. 2. The practitioner's expertise or professional judgment. 3. The client's (or their parents' or caregivers') preferences and values.

Expansion A process in which adults expand a child's utterance when they repeat it back to them with grammatical markers inserted. For example, a two-year-old says "Daddy go shop" and her mother replies "Yes, Daddy's gone to the shop". This may entail some extra emphasis on the expanded (added) components.

Family-centred practice A model of clinical practice in which the family is the client, not just the child, and where the family has the primary decision-making role.

Fidelity The extent to which an intervention is delivered as intended by the team that developed, trialled, and published it. Any (usually minor) local adjustments should not change the logic or integrity of the intervention.

Fluency (reading) The ability to confidently read a text accurately, at an appropriate rate, and with expression; this is a significant contributor to reading comprehension.

Fluency (speech) The continuity, smoothness, rate, and physical effort applied in speech production.

Fluency Disorder (speech; see also **Cluttering**; **Stuttering**) A neurodevelopmental difference in which the individual's speech is characterised by interruptions in the flow of utterances that involve atypical rate, rhythm, and dysfluencies such as repetitions of sounds (b-b-b-build), syllables (wa-wa-water), words (did you know-know that that that) and phrases (when we get, when we get, when we get back) prolongations of sounds (mmmouse) and syllables (Ste...ven), and temporary blocks where speech stops altogether.

Grammar (Morphology) The set of rules for how a natural language is structured, e.g., in terms of word order and markers of tense, as demonstrated by its speakers or writers.

Foetal Alcohol Spectrum Disorder (FASD) Complex neurodiversity associated with alcohol consumption by pregnant women during developmentally sensitive periods of infants' in utero growth (development in the uterus). Difficulties range across self-regulation, behaviour, attention, and learning, and there may be characteristic physical features, depending on the timing of the excessive alcohol exposure in the pre-natal period. FASD occurs across the social spectrum but can be especially stigmatising for the mothers of affected children in low socioeconomic communities.

Grapheme Written letters or letter combinations that represent phonemes (speech sounds) e.g., the grapheme “sh” represents the phoneme /ʃ/ in the word “sheep”. The phoneme /ʃ/ is represented by “c” in “special”, “ti” in “nation”, “ss” in “pressure”, “s” in sugar, and “ch” in “machine”.

Growth Mindset According to Carol Dweck, a growth mindset (GM) is the belief that abilities, intelligence, and talents can be developed and improved over time through dedication, hard work, and learning. People with a GM are said to view challenges as opportunities to grow rather than as indicators of failure or limitations. Despite the hype surrounding GM as a “magic bullet”, it is backed by slim evidence. It appears to be somewhat beneficial for students when aligned with broader, supportive educational practices. Some commentators have observed that it is *adults* who need a GM about what students can achieve.

Health Care Professional (HCP) The term applied to Allied Health Professionals in the UK. An HCP is a person associated with either a specialty or a discipline and who is qualified and allowed by regulatory bodies to provide a specialized healthcare service to a patient. They are medical and dental staff; nurses, midwives and health visitors; professions allied to medicine (PAMs) e.g., clinical psychologists, dieticians, physiotherapists; accident & emergency ambulance staff/paramedics and other professionals who have direct patient contact, e.g., pharmacists, medical photographers, medical records administrators.

Hothousing A metaphorical reference to the idea that some parents try to artificially accelerate their children’s development and/or go out of their way to develop skills (sporting, musical, artistic, academic) in their offspring. This usually involves the investment of significant time and money, and pressure to achieve. Such parents may or may not achieve their aims, and their children may or may not thank them for it later.

Homeschooling A form of education where parents or guardians (“home educators”) take primary responsibility for educating their children at home, rather than sending them to a traditional public or private school. In homeschooling, parents often design a personalized curriculum based on their view of their child’s learning needs, and interests. They may use various resources, including textbooks, online courses, tutors, or co-op classes, where homeschooled students learn together in groups.

Hypernasality Too much air coming out of the nose during speech. See **VPI**.

Hyponasality Too little nasal resonance due to restricted or blocked airflow in the production of “m”, “n”, and “ng” /ŋ/. Too little air coming out of the nose causes the person’s speech to have a “blocked nose quality” (denasality).

Identity-first (language) The practice of describing someone (or yourself) as autistic rather than “a person with autism”. The rationale for this is that autism is an inherent part of their, or your, identity and a matter of pride. Usage examples include “my cousin is autistic”; “I am autistic”; “I am a proud autistic man”. The same conventions apply to “stutterer” rather than “a person who stutters” (PWS), “clutterer” rather than “a person who clutters” (CWS), and ADHD where individuals tend to refer to themselves as “ADHDers”. In the early 2000s, there was a leaning towards “person-first” terminology (“child with autism”) in health and education, but advocacy groups have claimed this space and, in many cases, have expressed a clear preference for identify-first language. This does not necessarily apply to all forms of neurodiversity however, and it is wise to ask an individual (or their advocate) their preference. See **person-first (language)**.

Incidental phonics Reading instruction associated with balanced literacy in which phonics teaching is claimed to be “in the mix” but decoding is not explicitly or systematically taught or assessed. This means some children “catch on” in a timely way, while others lag and may be labelled “slow”, “lazy”, unmotivated, and/or dyslexic.

Inclusive education Policies and practices designed to ensure that all children attend mainstream schools, with appropriate supports. This is staunchly advocated by some policy makers, educators and parents who argue that centuries of segregation of people with disabilities have resulted in stigma and reduced opportunities across the lifespan. Others advocate with equal commitment for continued provision of special education and parent choice, arguing that inclusive education is “good in theory” but is far removed from the intensive resourcing levels needed to produce equitable outcomes, and avoid tokenism.

Inconsistent Phonological Disorder (Inconsistent Speech Disorder) A subtype of phonological disorder in which children have a difficulty generating a phonological plan for how to say a word. They will say the same word several different ways, e.g., “because” pronounced coz (which may be acceptable in informal English), uh-coz, decause, acaudz, betause, begause, and because (said correctly).

Individual Education Program or Plan (USA) (IEP) A management plan for a child with a diagnosed disability. This is developed by a team of educators and health professionals and typically has legal standing with respect to the provisions that need to be in place at school to support a child’s learning.

Individual Family Service Plan (IFSP) A management plan for a younger child (up to the third birthday) receiving early intervention services.

Interdisciplinary team Traditionally, a group of qualified professionals who work together to provide services to neurodiverse and/or disabled people, across the lifespan. Disciplines represented span everything from health, to education, psychology, information technology, and more in some cases. The word part “inter” means that team members’ work should “cross over” with that of other team members. This contrasts with the *multidisciplinary* team in which professionals work alongside each other, but where role overlap is discouraged. In contemporary times, individuals and their families are welcomed as members of the team, given the expertise drawn from lived experience that they bring to the table.

Intervention A goal-directed activity based on plans and procedures intended to improve a presenting problem. A synonym for treatment or therapy.

Educational interventions are strategies or programs designed to support and improve the learning and academic performance of students. They are usually applied when students are struggling or require additional support to meet learning objectives. Educational interventions can be used in general education or special education settings and are typically implemented by educators, learning specialists, or educational psychologists, and AHPs. The goal to promote academic success, enhance learning outcomes, and support students' cognitive and social development.

Intervention (treatment) Therapeutic interventions are any action or treatment designed to address or alleviate physical, psychological, or emotional health conditions in clients or patients. They are typically implemented by AHPs/HCPs to promote healing, improve functioning (e.g., communicative functioning and other behaviour), and enhance well-being. The goal is to help individuals recover from illness, manage chronic conditions, or cope with emotional difficulties.

Intervention dose The number of teaching episodes in an intervention session, e.g., the number of times a targeted speech, reading, grammatical, or writing skill is practised, in an intervention session.

Intervention dose frequency How often intervention sessions are scheduled per unit of time, e.g., once, twice, or three times per week, or daily on school days.

Intervention study A research project in which a new therapy or education approach is systematically trialled and evaluated. Intervention studies are ideally done by people not directly involved in the development of the approach, but this is not always possible for resourcing reasons.

Intellectual disability (ID) Impairment in cognitive functioning (learning, reasoning, abstract thinking) that has its onset in the developmental period (before the age of 18) and has a significant impact on everyday adaptive functioning (ability to care for oneself, to work, and function independently in the community). A Full-Scale IQ around 70-75 or below is part of the diagnosis. In the UK, the term “learning disability” applies to people who would be described as having an ID in jurisdictions such as Australia, Canada, New Zealand and the US.

Intelligence Quotient (IQ) A numerical measure of intellectual functioning (e.g., speed of thinking, abstract reasoning, problem solving, memory, verbal skills), expressed as a score that is most commonly somewhere between 80 and 120. IQ tests have a mean (average) of 100, which means 50 percent of the population have an IQ below 100 and 50 percent have a score above 100. IQ is considered in determining whether ID should be diagnosed. IQ tests typically result in three scores: Verbal IQ, Performance IQ, and Full-Scale IQ. Only registered psychologists can administer, score, and report on IQ tests.

International Classification of Diseases 11th Revision (ICD-11) The World Health Organization’s system for organizing and coding physical and mental conditions, for purposes of clarity and consistency in tracking trends and identifying service delivery needs across jurisdictions.

International Classification of Functioning Disability and Health (ICF) A biopsychosocial model, developed by the World Health Organization (WHO). It integrates medical and social perspectives on health, functioning, and disability, moving beyond disease-centred views to take in all aspects of an individual's life. It provides a holistic framework for considering an individual's body functions (physiological and psychological) and structures, activities, participation in life situations, and the influence of social, environmental and personal factors. The ICF is used globally in healthcare, policy making, and research to assess health outcomes, guide prevention and rehabilitation, and support individuals with disabilities. The ICF emphasizes that functioning and disability are dynamic and can change based on various factors, including environmental and personal contexts.

Initial Teacher Education (ITE) (pre-service teacher education; teacher training) In Australia, the four-year undergraduate university degree or two-year postgraduate degree by which individuals become formally qualified to gain teacher registration in their jurisdiction. University degrees need to be accredited by relevant external bodies, typically for up to five years at a time. ITE requirements vary in different nations and there are alternative, usually shorter pathways under government auspices, to reduce teacher shortages. ITE has been the subject of several government reviews in Australia in recent years.

Knowledge of Performance (KP) Verbal feedback as to *why* a specific response was correct or incorrect, e.g., “You remembered to put your tongue up for [I]” vs. “You forgot to put your tongue up for [I]”.

Knowledge of Results (KR) Nonverbal or verbal feedback as to whether a response was correct or incorrect without specifying why, e.g. thumbs up gesture, OK gesture, thumbs down gesture, “Great!”, “Good job!”, “Not quite”, ““Nearly”, “Uh oh”, “oops”, “No”.

Language (human) Any complex system of communication, used by humans, to send and receive messages via speech-and-hearing, writing-and-reading, and/or nonverbally with gestures and signs. In its spoken and written forms, it comprises sounds or letters, and words, phrases, and sentences that can be combined to create an infinite array of spoken or written utterances. Gestural language can be as simple as a goodbye wave or as complex and formal as fingerspelling or sign language.

Language disorder A diagnostic term referring to a profile of receptive and/or expressive difficulties with onset in early life, that interfere with everyday life activities, and which is associated with a biomedical condition (e.g., autism and/or Down syndrome). See **developmental language disorder**.

Larynx The “voice box” in the throat housing the vocal cords that produce voice when vibrating (as opposed to the whisper that occurs when they are not).

Learning disability (LD) / Learning disabled (LD) / Learning Difficulties (LD) In the UK these terms are used to refer to individuals with Intellectual Disability (ID). In the rest of the world, ID is the more common term. “LD” is easily confused with the term Specific Learning Disability (SLD) (see below). In Australia, learning difficulty and learning disability are related but separate terms describing academic struggles at school. See Australian /disability Clearinghouse on Education and Training <https://www.adcet.edu.au/>

Letter-sound knowledge Understanding of the names and at least some of the sounds associated with the individual letters in an alphabet. This knowledge is an advantage for children entering school, before they have experienced any formal reading instruction.

Lexical representation The abstract store, in long term memory, of what a person knows about a word, e.g., the phonological information comprising the word (how it sounds) and its semantic representation (the word’s meaning). Related to orthographic mapping.

Lexicographers People who compile and revise dictionaries.

Lingual frenulum The small fold of mucous membrane extending from the underside of the tongue to the floor of the mouth.

Literate language The types of words and style of written expression used by authors of fiction and non-fiction texts, aimed at readers with higher levels of education. It includes many words of French, Latin, and Greek origins.

Malocclusion A term from dentistry/ orthodontics for misalignment of the teeth (crooked teeth), and/or a faulty bite, and/or abnormally shaped or impaction of teeth (teeth stuck below the surface of the gum).

Masking A coping mechanism used by some autistic people when they consciously or unconsciously hide or camouflage autism characteristics to be accepted, for protection from harassment, and/or to try to conform to societal norms.

Medical model A traditional model that considers disability as a disorder to be treated, managed, and/or “fixed” by health professionals.

Metacognition The process by which we think about our thinking, for example, knowing how we know something or being aware that we find some mental processes easy or challenging.

Metacommunication Knowledge or awareness of what is involved in successful and unsuccessful communication.

Metalanguage / Metalinguistic skills The process of using language to talk about language, e.g., discussing shades of meaning between word definitions, or explaining the punchline of a joke that is based on a pun.

Mixed methods research A type of research that uses both quantitative and qualitative approaches to data collection, to gain the most wide-ranging understanding of phenomena of interest.

Mixed nasality A combination of hypernasal and hyponasal speech, where “hyper” means too much and “hypo” means not enough.

Monolingual Proficient in speaking, writing, and understanding one language only.

Morphology The study of smallest units of meaning (morphemes) within words, e.g., the word “untestable” breaks down into three morphemes: un + test + able.

Motor Speech Disorder (MSD) A neuromuscular impairment of the speech organs producing, in an individual, CAS, childhood dysarthria (CD), or a combination of the two.

Multilingual Proficient in speaking, writing and understanding more than one language.

Multimodal communication The use of more than one modality (sensory and motor channel) in the sending and receiving of everyday messages between people. Spoken conversation entails auditory information (spoken words, tone of voice, volume) as well as visual information (facial expressions and gesture) and motor processes (movement of the articulators and use of hands for gesture). Sometimes these are augmented with tactile (touch) cues, and the addition of extra information, such as letters, pictures and symbols.

Nasopharynx The rear of the nasal cavity including the upper part of the pharynx and the space above the soft palate (also called the velum).

National Health Service (NHS) Publicly funded universal healthcare systems in the United Kingdom.

Neurodevelopmental disorder A condition involving altered or “different” development of the CNS. Affected individuals include children and adults with ADHD, autism, DLD, developmental coordination disorder (DCD), intellectual disability (ID), specific learning disability (SLD), synesthesia (e.g., “seeing sound”, “tasting shapes”, etc. due to sensory crossover), and tic disorders (e.g., Tourette syndrome), affecting various aspects of life. Such neurodiversities typically appear early in childhood and impact areas such as behaviour, communication, learning, motor skills, sensory perception, and social interactions. They are thought to arise from a combination of genetic factors and environmental influences, varying widely in their characteristics, effects, impact, and severity.

Neurodiversity model A model of disability that champions neurological diversity and neurodiversity-informed practices. This does not necessarily mean that its adherents view disabilities as non-existent. For example, autism may be a disability in a worldview that values neurotypical (allistic/non-autistic) ways of thinking, but in a worldview that affirms, and understands neurodiversity, it might not be.

Neurospicy Some people favour the term “neurospicy” as a way a way of describing a person who experiences multiple forms of neurodivergence, or a collective, such as a family that has many neurodivergent members.

Norm A shortened version of “normal”, so refers to what is expected or usual. We refer to *social norms* (culturally expected and accepted ways of interacting) and *test norms*, which are the range (spread) of scores we expect to see in typically developing population samples of different ages.

Nonverbal Learning Disorder / Nonverbal Learning Disability (NVLD) A neurodiversity that lacks a standard (widely accepted) definition so is not included in the DSM-5-TR or ICD-11 (advocates would like it to be). Individuals with NVLD have difficulty with spatial, visual, and organizational processes and average-to-above average verbal skills. They often struggle to recognize and interpret nonverbal cues (e.g., facial expression, body language), spatial relationships and patterns. This can impact social interactions, and motor skills, as well as academic performance in areas requiring spatial reasoning (e.g., manipulating shapes, map reading, conceptualizing distances, understanding maths, solving puzzles, assembling objects, and interpreting diagrams).

Normal curve / bell curve /normal distribution The way that scores spread out around the average (mean) when a research sample is large enough. Shaped like a bell, 50 percent of scores are below, and 50 percent above the mean (average), median (mid-point), and mode (most commonly occurring value) - measures of central tendency that all have the same value in a normal (non-skewed) distribution.

Open Access (publication). Academic journal articles that can be viewed and/or downloaded by anyone who has internet access, i.e., they are not behind a publishing house paywall. This is not, by itself, a marker of quality.

Operant conditioning A theory of learning concerning how behaviours can be trained through consequences. It is the underlying theory of ABA. See also **classical conditioning**.

Oral language vocabulary The words an adult or child understands (comprehends) and can use in signing, speaking and writing: part of the semantic system of oral language.

Orthographic mapping The gradual process by which beginning readers build up a store of tens of thousands of written words in their long-term memory, knitting together spelling, pronunciation and meaning, to support automaticity in reading and, hence reading comprehension.

Orthography A linguistics term referring to the correct way to write words for spoken languages that also have writing systems.

Otitis Media (often called middle ear infection or middle ear disease and sometimes “earache”). An overarching term for all types of inflammation and infection of the middle ear.

Otitis Media with Effusion (OME) / “glue ear” A condition in which there is a build-up of fluid in the middle ear but no signs of acute infection.

Paywall An online mechanism to prevent free access to academic literature. Users are expected to pay per article.

Peer review The process by which academic journal manuscripts are reviewed by researcher peers not connected to the research, to ensure the highest possible quality of what is ultimately published in academic journals (publications of professional organizations and other learned bodies). Often done single-blind (authors are not told who the reviewers are) or double-blind – neither the authors nor reviewers are told each other’s identities. This process typically occurs over a three to six-month period.

Person first (language) Recall that identity-first language situates autism as inseparable from the person, integral to their identity, and important to them. Person-first language implies separation between autism and the individual. Examples include “a person with autism” and “adults with autism”. Other examples are “a person who stutters”, “a person with ADHD”, and “people with a disability” or “people living with disability”. See **identity-first** (language).

Personality The enduring arrangement of characteristics and responses that make up an individual’s unique adjustment to life, including major traits, interests, drives, values, self-concept, abilities, and emotional patterns that help determine behaviour and coping strategies.

Phonation The process of vocal cord/vocal fold vibration that results in voice.

Phone An individual speech sound.

Phoneme (speech) A speech sound that contrasts meaning between minimal pair words in a language, e.g., /p/ and /b/ are phonemes because minimal pairs such as “pie” and “buy” or “chin” and “shin” sound different from each other and have different meanings.

Phoneme Grapheme Correspondence (PGC) the relationship between graphemes (the letters or groups of letters that represent sounds) and **phonemes** (the individual sounds in spoken language). For example, the phoneme /tʃ/ (“ch”) corresponds with the grapheme ch in “chip”.

Phonemic awareness (PA) An awareness of and the ability to detect, categorize, match, isolate, blend, segment, or manipulate phonemes in words. A sub-category of phonological awareness that is relevant to early reading instruction.

Phonics instruction A method of teaching reading, spelling and writing to beginning-readers. It is based on the known relationships between phonemes (the sounds of spoken language) and graphemes (the letters that represent them in written language).

Phonics Screening Check A brief check of beginning readers’ ability to read (decode) isolated unfamiliar words, after 18 months of formal instruction. Both real and pseudo (phonically legal) non-words are used.

Phonological awareness (PA) The ability to detect, categorize, match, isolate, blend, segment, or manipulate phonological elements (e.g., syllables, rhyme, phonemes) of an oral language.

Phonological disorder/ Phonological impairment An SSD due to a cognitive-linguistic difficulty with learning the phonological system of a language. It is characterized by pattern-based speech errors called phonological processes or phonological patterns.

Phonological delay An SSD in which a child’s speech contains phonological processes or errors that are typical in the speech of younger children but which, typically would have gone.

Phonological impairment / Developmental phonological disorder A cognitive-linguistic SSD due to difficulty with learning the phonological system of a language. It is characterized by pattern-based speech errors.

Phonological processes (phonological patterns) Descriptive terms for phonological pattern-based errors in children’s speech.

Phonological processing The way an individual handles, mentally (i.e., perceives, creates, stores, retrieves) phonological information relevant to a language, to read, write, spell, understand and speak that language.

Phonological working memory The portion of working memory that temporarily stores spoken information for processing.

Phonology A branch of linguistics that is concerned with the study of the sound systems of languages.

Place-Voice-Manner (PVM) A consonant classification system from the study of phonetics in which all consonants are classified in terms of their place of articulation (P), voicing (V), and manner of articulation (M).

Place-Voice Manner Chart (PVM Chart) A chart that contains the phonetic symbols for all the consonants in a language (e.g., a PVM Chart for English, a PVM Chart for Urdu). It is different from a Consonant Chart which contains all the consonants from all known languages.

Polysemy A feature of many common words in English whereby they have many (poly) meanings (semy), although their spelling and pronunciation do not change, e.g., *funny* can mean “odd” or it can mean “amusing”.

Pragmatics The way that speakers adjust their communication style according to situational factors, such as the purpose of an interaction, the relationship between the speakers, and environmental factors, such as background noise. Pragmatics takes in how we introduce and change topics, sensitivity to cues from conversational partners (e.g., about interest in a topic), and awareness of situational “unwritten” rules about topics, word choices, and use of humour.

Predictable texts repetitive texts / patterned texts / levelled texts These are texts used to support initial reading instruction in the context of balanced literacy classrooms. These texts are associated with guessing and/or over-reliance on pictures, rather than supporting emergent readers to decode through unfamiliar words.

Presentism A human tendency to interpret past phenomena in terms of current beliefs and knowledge; the application of present-day values to interpretations of the past; judging previous generations’ behaviour by today’s standards.

Prognosis A term originating from the medical model meaning a forecast or prediction. It is applied to the likely course and outcome of a **condition**—a disruption to regular bodily structure and function or abnormal health status interfering with someone’s usual activities or feeling of wellbeing e.g., gastroenteritis, or a **disease** e.g., heart disease. A prognosis can also relate to a statement of the likelihood of recovery (or not) from a condition or disease.

Prosody The “melody” in speech that stops it from sounding mechanical or robotic and contributes to the way speakers convey meaning. In English, the prosodic contour (the rise and fall of the pitch of the voice, or intonation, to add meaning and emphasis) typically goes up at the end of a question and down at the end of a statement, but there are dialectical variations in this.

Pseudoscience A notion, methodology, or practice that lacks scientific foundation. Ideas said by some individuals or organizations to be scientific or supported by science, but which do not meet the standards associated with the scientific method and/or are theoretically implausible or impossible. An activity displaying some shallow features of science that is based on false assumptions.

Psychometric properties Features of a test used by psychologists and SLTs/SLPs that describe how “tight” the test is. *Validity* (of various forms) refers to how well the test measures what it claims to be measuring (e.g., IQ, language comprehension, problem-solving) and *reliability* refers to its consistency (stability) over time and in the hands of different users.

Push-in support / push-in model Occurs when a practitioner sees one or more children in a separate part of the classroom while others in the class complete different activities.

Pull-out support / pull-out model Occurs when a health practitioner sees children at school for an assessment and/or intervention in the practitioner’s office, clinic room, or other space set aside for that purpose.

Qualitative research A descriptive and interpretative approach to scientific inquiry that is derived from sociology, ethnography, and anthropology. People with lived experiences are interviewed (individually or in groups) and literature (such as newspapers, websites, journals, magazines, information brochures) may be analysed for recurring themes.

Quantitative research A positivist approach to scientific inquiry that is derived from the pure sciences and relies on observations, counting and measuring phenomena, and forming and testing hypotheses. Positivism (rationalism) refers to the idea that there is an objective reality in which phenomena can be observed, measured, counted, and predicted.

Randomized controlled trial (RCT) An experimental research design in which participants are randomly allocated (rather than assigned by a potentially biased researcher) to a study arm, usually an experimental group or control group. In most cases, the control group receives “business as usual” services – not nothing at all. Often described as “gold standard” but RCTs are not without their limitations in applied education and clinical settings.

Reading difficulties A profile of reading (decoding, fluency and/or comprehension) skills that is significantly below a child’s expected grade level, as determined on robust assessment measures. Reading difficulties can occur across the IQ spectrum and may sometimes result in a formal diagnosis of dyslexia, but this is not always the case, for a range of reasons. Some children with reading difficulties have been exposed to high-quality instruction, while others have not.

Reading Recovery® (RR) An expensive “wait to fail” whole language-based approach to reading support delivered over 20 weeks in Year 1 that has been found, over the course of many years of research, to not meet the needs of nearly enough children who struggle with reading. (see **Wait to fail**).

Reading wars The decades-long debate among reading scientists, policy makers, educators and clinicians about the “best” way to teach children to read. Originally framed as “whole language Vs phonics” but more recently framed as balanced literacy Vs structured explicit literacy teaching.

Receptive language The human ability to comprehend information and to understand and/or interpret spoken, written, or gestural (signed) language.

Resonance The quality of an individual’s speech with respect to airflow through the oral and nasal cavities.

Resonance disorders Speech characteristics of hypernasality (too much), hyponasality (not enough), mixed nasality, and cul-de-sac resonance (occurs when air is trapped in the throat) resulting from problems with the structure (anatomy) and/or functioning of the organs of speech.

Response to Intervention (RTI) A three-tiered school-based model for preventing academic and/or behaviour difficulties, through the provision of high-quality, evidence-based teaching and support in mainstream classrooms (Tier 1), plus the use of robust screening tools to ensure early identification of children who need additional support in small groups (Tier 2) and timely provision of this. Those children whose progress continues to be concerning are offered Tier 3 (1:1 specialist) support. The nature of the instruction and support should not be qualitatively different at the higher tiers, but its *dose* increases in terms of frequency, duration, and intensity.

Running Record An assessment and progress-monitoring tool for use by classroom teachers, developed in New Zealand by Dame Marie Clay (b. 1926; d. 2007), the creator of Reading Recovery, in the 1970s. The Running Record aligns with whole language instruction and has been shown, through independent research, to have weak psychometric properties in reading progress-monitoring.

Salience A noun that means the quality of being prominent or noticeable. It comes from the adjective salient, which means standing out or conspicuous. For example, your birthday will be a salient date for you.

Scoping review A type of literature review carried out by academic researchers to assess the nature and quality of research on a particular topic, in a specified time-period. The final manuscript is submitted to an academic journal, where it undergoes peer-review before a decision to publish is made by the editor and the editorial team.

Selective mutism (SM) An anxiety disorder in which an individual who is otherwise capable of speech becomes unable to speak when exposed to specific situations (e.g., extended family gatherings), specific places (e.g., school), or to specific people (e.g., an athletics coach). One or any combination of these may act as triggers. In SM, withholding speech is not a deliberate act. Psychologically based therapies are the first-line interventions for SM.

Semantic representation Abstract store of information, in long-term memory, about the meaning(s) of a word.

Semantics The aspect of linguistics concerned with word meanings. Semantic development is the process of learning words and their meanings.

Serve and return interactions The back-and-forth, tennis-like social interactions between infants and their adult caregivers. These promote emotional attunement and language development and have been shown to contribute to early brain development.

Session duration The period (time) taken to run an assessment or intervention session.

Sign Languages (Auslan, ASL, BSL, NZSL, and 300 or so more) are shared by a community of signers and contain their own syntax, morphology, and pragmatics. Some deaf and hard of hearing (HoH) PWHL and CWHL use their sign language, with or without finger spelling and/or speech to communicate. Some forms of sign language use one hand and others use two.

Simple code (See also **Complex code**) A term used by some reading scientists and early years teachers to describe the elements of the English writing system that are relatively transparent between speech and print, e.g., the individual sounds and letters in the word “dog”, as compared to “dough” which is an example of what some would describe as complex code (i.e., less transparent).

Simple view of reading (SVR) A theoretical model of the early reading process proposed by reading scientists Philip Gough and William Tunmer, in 1986. The SVR represents, in mathematical terms, the fact that reading comprehension is the product (not the sum) of two equally essential, connected, but separate processes – decoding or recognizing the printed word, and then understanding what it means. Reading comprehension = decoding ability x oral language comprehension. In the early stages of learning to read, most effort goes into learning how to decode, and once this skill is bedded down, mental effort shifts to the ability to understand increasingly complex texts.

Single-case experimental design An experimental research design in which a researcher or research team examines change over time for an individual in response to an intervention. The research involves a comparison of a skill or behaviour between the baseline phase (at the start of the research) and the experimental/intervention phase(s). Multiple single-case designs involve doing this with more than one individual, e.g., in the same year-level at school.

Social cognition (“emotional intelligence” (EQ) A person’s ability to “read the play” in real time in social situations and interpret how other people are feeling, understanding that this may be at odds with what they say about how they are feeling.

Social model A model of disability that views disability as a series of barriers created by humans, and so able to be modified or removed by humans, e.g. through laws and local policies.

Socioeconomic status (SES) Stratification of individuals or group based on measures of education, income, occupation, and access to resources.

Specific Language Impairment (SLI) A term used by researchers for around three decades (roughly from the 1980s) to describe the relatively small proportion of children with “pure” language disorders, who were often thought to have difficulties mastering the rules of grammar. This term was never favoured by clinicians, whose caseloads were made up of children with language disorders *and* other forms of neurodiversity, such as ADHD and autism. Its use is retained by some researchers, but most researchers and clinicians now refer to LD and DLD.

Specific Learning Disability (SLD) According to DSM-5-TR Specific learning disorder (SLD) refers to specific deficits in an individual’s ability to perceive or process information for learning academic skills efficiently and accurately. For a formal diagnosis, these difficulties must first appear during the school years and represent persistent challenges in learning foundational academic skills in reading, written expression, and/or mathematics. Children with SLD perform well below average for age, sometimes in the context of average or above-average IQ and their difficulties generally persist into adulthood, despite appropriate intervention and support. DSM-5-TR specifies that difficulties may be mild, moderate or severe.

Speech Sound Disorder(s) (SSD) An umbrella term to describe difficulties with speech production and perception that are not typical for an individual’s age, cognitive ability, and language background. SSD includes phonological impairment, articulation impairment, and the Motor Speech Disorders (MSD) CAS, childhood dysarthria, and speech motor delay (SMD).

Stammering (see Stuttering).

Standard deviation In the field of statistics, a mathematical measure of variability in the data, and the distance of an individual score from the mean (average) of the whole sample. In a normal (bell-shaped) distribution, about two thirds of scores fall between minus 1 and plus 1 standard deviations from the mean.

Standard score On a psychometrically robust test, a numerical value that represents where an individual score sits relative to the mean and to other scores in the same distribution. Many subtests of IQ measures used by psychologists have standard scores of 10 and standard deviations of 3.

Standardized assessment An assessment (test) in which an examiner uses consistent test materials, consistent procedures for test administration, and consistent scoring rules, so an individual can be reliably compared with the sample on which the test was normed.

Stuttering An involuntary (unintentional) repetition of sounds, syllables, words, or sentences that disrupts the rhythm or flow of speech. In some people who stutter (PWS) it both creates and is worsened by psychological distress.

Syntax The rules of a given language that govern word and phrase order in sentences, how plurals and tense are expressed, and how punctuation is used to support meaning in written language.

Systematic review A rigorous research analysis carried out by academics to synthesize the current “state of play” in the published research literature regarding a particular research question, e.g., optimal ways to diagnose condition X or to treat condition Y. A careful process is mapped out that details which studies will be included/excluded, and the final manuscript is submitted to an academic journal, where it undergoes peer-review before a decision to publish is made.

Systematic synthetic phonics instruction (SSP) An approach to initial reading instruction that relies on explicit teaching of phoneme-grapheme correspondences using a predetermined teaching scope and a sequence that lays out which correspondences are taught, and when. SSP is widely regarded by reading scientists as the best way to ensure early decoding success, so that the focus of teaching and learning is on the more complex elements of the reading process that result in comprehension of the text (e.g., vocabulary and syntax knowledge, inferencing, and background knowledge).

Teachable moment / Teaching moment The incidental and opportunistic explanations and demonstrations that occur when parents, teachers, clinicians, and others, notice an error or difficulty that can be easily and promptly addressed “on the spot”.

Temperament A collection of dispositions that work together to make up an individual’s personality. Temperament can be described with reference to dimensions like extroversion-introversion, reactivity, openness, and anxiety. A person’s temperament is the result of both genetic influences and life experiences, especially in the early years. It remains relatively stable over the lifetime but is not fully fixed.

Theory of Mind (ToM) The mental capacity to understand that other people know or believe different things from what we ourselves know or believe. This develops around the age of 4 and translates into the important life skills of perspective-taking and anticipating/averting unwanted and avoidable misunderstandings.

Three-Es of treatment efficacy and quality assurance. The 3-Es are 1) treatment **effectiveness**: establishing that the new treatment works in the real world, 2) treatment **effects**: the measurable and observable behavioural changes following the new treatment, and 3) treatment **efficiency**: whether the new treatment method is better than and/or more economical than its “old” competitors with respect to the use of everyone’s time and money.

Three cueing / Multi-Cueing / Searchlights A whole-language and balanced literacy-based approach to reading instruction that encourages children to rely on cues outside of the printed word to master early reading. The three so-called “cues” are described differently by different authors, but in general, they refer to visual cues (pictures), semantic cues (“what would make sense here?”), and phonic cues (“look at the first letter; do you know any words that start with this letter?”). Often described by reading scientists as “teaching the habits of poor readers”.

Tics and tic disorders Tics are rapid, repetitive, involuntary body movements, and/or vocal sounds (e.g., a hum, cough, speech sound, or word) and/or non-vocal sounds (e.g., a whistle, “creak”, or audible intake of air). Tics are common in childhood. Frequently, they are mild and go away over time. More severe or frequent motor tics in children may signal a neurodevelopmental condition called a tic disorder, for example Tourette syndrome, which affects about one percent of school-aged children and adolescents.

Tiers of instruction See **Response to Intervention**.

Time out A method of discipline in which a child is removed, by an adult, from social interaction to an unstimulating place (e.g., in a quiet room with an open door, or a “naughty step”) usually after a warning, for a few minutes because of unacceptable behaviour.

Top-down reading instruction Approaches to teaching reading that start at the big picture meaning-level, and only go down to more granular specifics (e.g. of phoneme-grapheme correspondences) incidentally, e.g., balanced literacy.

Transferrable skills Abilities or competencies learned in one context that can be applied in one or more different situations, problems or tasks. Among researchers, the term “near transfer” is used when the new task or problem closely resembles the original learning context and “far transfer” when they are dissimilar. In children, transferrable skills are abilities developed, ideally with the help of explicit teaching, modelling and feedback, through daily activities, chores, schoolwork, play, and social interactions that are applicable to various settings as they mature. The skills are potential foundations for success in academic and non-academic contexts, and a preparation for a lifetime of adapting to changes and challenges.

Trauma-informed practice The design and delivery of services (health, education, welfare, justice) that consider the mental health impacts of trauma exposure of various forms, so that individuals are not “triggered” by seemingly (to others) innocuous events or comments. Trauma can involve abuse and/or neglect in childhood and may refer to sustained patterns of experience or to single significant events.

Treatment Any preventive, therapeutic, rehabilitative or palliative action intended to improve the health or wellbeing of individuals or communities. Treatments can be drugs, biological products (e.g., cells), surgical procedures, radiological procedures, physical therapies, devices, psychological or behavioural treatments, screening, and vaccination. See **intervention**.

Tympanometry A method of audiological (hearing) testing to assess the function of the middle ear, particularly the ear drum (tympanic membrane). It detects whether sound that enters the ear canal travels through the middle ear space effectively, so it can reach the inner ear and then be registered by the brain. Results are in the form of a trace on a graph called a tympanogram which is interpreted by an audiologist.

Variables (see **dependent variable** and **independent variable**).

Velopharyngeal Dysfunction (VPD) A general umbrella term that doesn't relate to causes. The three types of VPD are immediately below.

Velopharyngeal Insufficiency (VPI) A structural abnormality (anatomic difference) such as cleft palate. In VPI, the velum (soft palate) may move well, but is too short to close off the passage of air to the nasal cavities.

Velopharyngeal Incompetence (VPI) A neuromotor abnormality, not an abnormality of the child's anatomy, usually associated with dysarthria. The velum may be structured normally but cannot move adequately due to a neurological condition (e.g., cerebral palsy).

Velopharyngeal Mislearning An articulation disorder where nasal sounds (m, n, or ng /ŋ/) replace oral sounds, so that speech is perceived by others as hypernasal. Sometimes, these sound replacements are "compensatory" and produced when the speaker tries to get around their VP insufficiency.

Venn diagram / Set diagram / Logic diagram. A diagram with overlapping circles or other shapes that show the logical relationships between two or more sets of items. They often serve to group items to illustrate how they are the same as and different from each other.

Vocal Cords Vocal folds / Vocal ligaments two bands of muscle situated in the larynx (voice box) that produce sound (voice) when they vibrate.

Vocal nodules Benign (noncancerous) "masses" on the midpoint or towards the front of one or both vocal cords—the most-used sections that get the most wear and tear. Often, when a nodule forms on one cord it rubs against the other cord, producing a second nodule.

Voice disorder / Dysphonia A medical condition affecting voice production in the larynx.

Vowel (reading, writing, and spelling) The alphabet letters Aa, Ee, Ii, Oo, and Uu. The letter Yy does the job of a vowel within, at the end of, and occasionally at the beginning of some words, e.g., "gym", "why", "pygmy", and "slyly", and at the beginning of some proper nouns, e.g., the girls' names "Yvonne" and "Yvette" and the Belgian place name "Ypres".

Vowel (speech) A speech sound produced with the vocal cords vibrating and without constriction in the vocal tract.

Wait to fail approach An approach to education where support for struggling students is withheld until they significantly fall behind their peers. The approach delays intervention, increasing the likelihood of poor outcomes. It may be driven by adherence to low-impact instructional approaches and by cost-avoidance in school districts.

Within Normal Limits (WNL). A medical-model term indicating that no abnormal (unexpected) results were found when assessing an aspect of a child's or adult's skills. Other ways of saying WNL in children is to report that their performance, when tested, was "age appropriate" or that their results were "within typical age expectations".

Whole language (reading instruction) An approach to reading instruction that originated in the US in the 1970s and rapidly spread to other English-speaking nations. Based on the incorrect assumption that learning to read is "natural" if children are immersed in beautiful children's literature, this approach resulted in a steady degradation in teacher knowledge and high levels of reading failure. Around the turn of the 20th century, it was re-badged as "balanced literacy", with a light smattering of non-explicit phonics added in, and little change occurred in day-to-day classroom practice (or children's reading data).

Word finding (word retrieval) The ability to efficiently retrieve specific words from long term memory that are needed for spoken, written, or gestured language. This is a skill that can be impacted by LD/DLD and by acquired neurological conditions such as stroke, brain injury, and dementia.

Zone of proximal development (ZPD) The layer of "next skills" that sit just beyond what a child is currently able to do independently. In the ZPD, the child may be able to do something with assistance (usually from adults), but not on their own, e.g., brushing their teeth.