

Московский педагогический
государственный университет



И. В. Андерсен
АНГЛИЙСКИЙ ЯЗЫК ДЛЯ ЛОГОПЕДОВ

Irina Andersen
ENGLISH FOR SPEECH-LANGUAGE PATHOLOGISTS

Учебное пособие в 3 частях

Часть 2

Москва 2024



Министерство просвещения Российской Федерации
Федеральное государственное бюджетное образовательное учреждение
высшего образования
«Московский педагогический государственный университет»



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А65 Английский язык для логопедов = English for Speech-Language Pathologists : учебное пособие в 3 частях. Ч. 2 / И. В. Андерсен = Irina Andersen; [науч. ред. А. А. Алмазова]. – Москва : МПГУ, 2024. – 162 с. : ил.

ISBN 978-5-4263-1416-0

Учебное пособие по английскому языку предназначено для магистрантов, обучающихся по направлению подготовки 44.04.03 Специальное (дефектологическое) образование (направленность – логопедия), аспирантов, студентов, ведущих научно-исследовательскую работу на разных этапах обучения, профессиональных логопедов, а также для широкого круга лиц, интересующихся проблемами нарушений речи. Учебное пособие опирается на корпус исследований и публикаций по дисциплине, отвечающих актуальной повестке и соответствующих тематике, предусмотренной рабочей программой дисциплины «Иностранный язык для специальных целей». Методологической основой разработки пособия является синергетический подход, предполагающий интеграцию технологии тезаурусного моделирования профессиональных терминов логопедии и корпусные инструменты для организации проблемного подхода к формированию иноязычного научно-профессионального дискурса.

УДК [811.111:376.37](075.8)
ББК 81.432.1:74.57я73

ISBN 978-5-4263-1416-0
DOI: 10.31862/9785426314160

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ПРЕДИСЛОВИЕ ОТ РЕДАКТОРА

Предлагаемое вниманию студентов и преподавателей пособие выпускается на этапе перехода российского образования к суверенной национальной модели высшей школы. Важной и актуальной научно-методической задачей этого процесса является разработка современных концептуальных, содержательных и технологических компонентов иноязычной подготовки будущих специалистов.

Изучение иностранного языка является важнейшей составляющей высшего образования, обеспечивающей формирование коммуникативной, культурологической, исследовательской и других компетенций в их связи с компетенциями профессиональными. В системе подготовки логопедов это изучение имеет свою специфику. Она связана с необходимостью компаративного анализа терминологии в отечественной и зарубежных научных школах, сопряжения профессионального тезауруса, сопоставления схожих и уникальных примеров практической деятельности логопеда в России и других странах, а также широкого привлечения данных смежных наук (медицина, лингвистика, нейропсихология и др.).

Все это определило новый подход к преподаванию профессионального английского языка и созданию учебного пособия. Этот подход основан на синергии, сочетании различных аспектов: тезаурусного, позволяющего изучать профессиональную терминологию в системе, и корпусного, предлагающего инструменты для анализа типичных языковых явлений.

Пособие направлено на развитие навыков профессионального общения на иностранном языке в устной и письменной формах. Изучение языка происходит при погружении в профессиональный контекст, который связан с квалификацией, диагностикой и коррекцией речевых и языковых нарушений, доказательностью данных, междисциплинарным изучением и сопровождением людей с такими нарушениями в различных институциональных условиях,

этическими аспектами работы логопеда и возможностями непрерывного профессионального развития.

Реализованный в пособии подход способствует формированию профессиональной языковой личности будущего логопеда, позволяет студентам глубже понять специфику осваиваемой профессии, расширить свой кругозор, обогатить методический инструментарий. Разнообразные коммуникативные задания помогут студентам освоить англоязычный научно-профессиональный дискурс, приобрести навыки работы с научно-методической литературой. Все тексты и задания в пособии подобраны с опорой на современные исследования в области логопедии и смежных областей, представленные в научной и учебно-методической отечественной и зарубежной литературе.

Пособие разработано в соответствии с программой изучения английского языка для специальных целей, которая включена в образовательные программы магистратуры, а в 2024 г. существенно обновлена для программ специализированного высшего образования по направлению 44.04.03 Специальное (дефектологическое) образование (направленность – логопедия) в МПГУ¹.

Подход, предложенный в пособии, является продуктивным и перспективным для изучения профессионального английского языка не только в магистратуре. Пособие может быть полезным в рамках дисциплин по выбору, практикумов, факультативов, учебно-исследовательской работы студентов на уровне базового высшего образования, а также в аспирантуре.

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¹ Согласно Указу Президента РФ от 12.05.2023 N 343 «О некоторых вопросах совершенствования системы высшего образования» МПГУ в 2023–2025 гг. реализует пилотный проект, направленный на изменение уровней профессионального образования.

PREFACE

This is the second installment of “English for Speech-Language Pathologists,” a coursebook designed to enhance the English language proficiency of master’s students undergoing professional training in the field of SLP. This volume is structured into four modules, each dedicated to exploring essential topics of the discipline: Developmental Language Disorders, Neurogenic Communication Disorders, Voice and Resonance Disorders, and Swallowing Disorders.

Each module offers 9 hours of guided auditory work, complemented by additional hours for independent study. The content spans theoretical foundations, practical applications, analysis of clinical cases, and critical discussions within professional settings. The integrated independent study component fosters self-directed learning and application of concepts.

The coursebook employs advanced pedagogical strategies to ensure a dynamic and engaging learning experience. Its methodological foundation is rooted in the synergy between thesaurus modelling and a corpus-based approach to developing professional language proficiency. The coursebook’s design reflects a commitment to fostering a comprehensive understanding of SLP within an international context, with an emphasis on comparative analysis of Russian and foreign traditions and approaches.

Upon completion of this installment, students are expected to demonstrate enhanced proficiency in English communication within diverse professional SLP contexts, focusing on developmental, neurogenic, voice, resonance, and swallowing disorders. They will exhibit competence in analysing complex cases, explaining the neurophysiological bases of various communication and swallowing disorders, and formulating evidence-based intervention strategies for clients across the lifespan.

We are confident that this coursebook will serve as a practical and beneficial tool in students’ pursuit of excellence in the field of SLP, equipping them with the linguistic and professional competencies necessary for success in an increasingly interconnected world.

Author

MODULE 5

COMORBID CONDITIONS IN PAEDIATRIC COMMUNICATION DISORDERS

In this module, you will practise:

Skills focus

Reading	Developmental Coordination Disorder in Children with Childhood Apraxia of Speech
Listening	How technology Is Helping Children with Cerebral Palsy
Writing	A journal article review
Speaking	Collaborative project: A parent support plan for a family of a child with a cochlear implant Role-play: A consultation meeting between an audiologist, speech-language pathologist and the parents of a child with a cochlear implant

Language focus

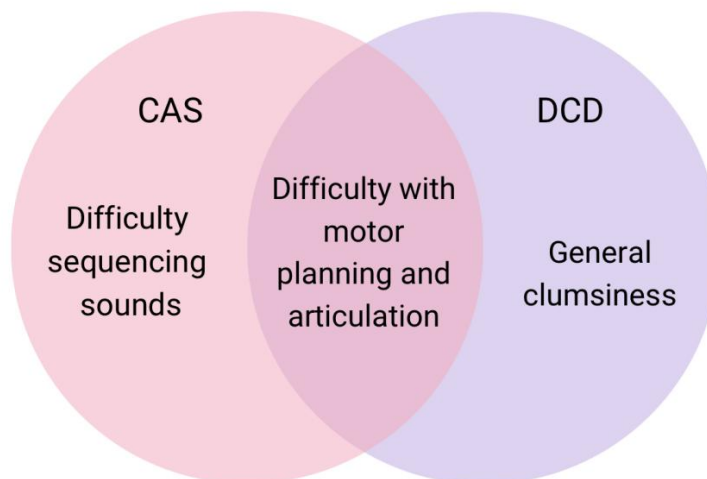
Professional terminology
CAS, cerebral palsy, Developmental Coordination Disorder, motor planning difficulties, neuromuscular disorders, phonological processing disorder, comorbid pathology, early detection of motor disorders, neural substrate, procedural learning, typically developing children, Down syndrome, exclusion criterion, muscular dystrophy, degenerative disease, sampling rate, Sensory Processing Disorder, developmental delay, etc.
Functional language for academic and professional writing
The purpose of this paper is to provide information on diversity in the speech and language profiles of people with ASD. We offer a discussion of the existence of language profiles identified in individuals with ASD and a categorical approach to support ongoing diagnostic and intervention efforts. Joint attention, imitation and play are the first aspects of sociability that have been related to the development of language and communication skills, either in children demonstrating typical development (TD) or in children with developmental disabilities, etc.
Functional language for academic and professional speaking
Let's start with a brief overview of [child's name]'s current condition. From a speech and language perspective, we are working on improving articulation. Our main goals for [child's name] include improving and expanding vocabulary, etc.

Unit 17. Comorbid Presentations of Childhood Apraxia of Speech and Developmental Coordination Disorder

Activity 1. Work in pairs. Discuss the questions.

1. How can therapists identify and differentiate between Childhood Apraxia of Speech and Developmental Coordination Disorder symptoms?
2. What practical strategies can speech-language pathologists use to address children's challenges with both CAS and DCD?

Activity 2. Identify characteristics of CAS, DCD, and those that overlap.



Activity 3. Categorise each symptom below as a symptom of CAS, DCD, or applicable to both conditions.

Inconsistent sound errors, limited babbling as an infant, difficulty imitating speech sounds, challenges with fine motor skills, poor balance, delays in motor milestone achievements (e.g., crawling), difficulty forming clear and consistent speech sounds, groping movement when trying to speak, unintelligible speech, difficulty with tasks that require motor precision, poor muscle tone, difficulty following multi-step instructions,

over-reliance on visual or tactile cues, limited social interaction skills, difficulty with tasks involving both motor skills and speech, avoidance of activities that require fine motor skills, frustration when trying to speak.

Symptom	CAS	DCD	Comorbid

Activity 4. Discuss in groups. What roles do different specialists play in supporting children with comorbid CAS and DCD?

Activity 5. Fill in the definitions and the goals for each intervention strategy. Which are applicable for CAS, DCD, or comorbid conditions?

Intervention and support strategy	Definition	Goal
Sensory integration therapy		
AAC		
Targeted speech sound production exercises		
Emotional regulation strategies		
SLP focusing on motor planning		
Occupational therapy		
Social skills training		
Handwriting practice and support		
Activities to improve muscle strength and tone		

Activity 6. Read the text. What are the common characteristics of Developmental Coordination Disorder in children with Childhood Apraxia of Speech?

Developmental Coordination Disorder in Children with Childhood Apraxia of Speech

Childhood Apraxia of Speech (CAS) is a neurological speech sound disorder characterised by deficits in the planning and programming of speech motor movements in the absence of neuromuscular deficits (ASHA, 2007). A child with CAS will typically know what they want to say but will experience a breakdown in getting that message properly articulated. This is due to difficulties in planning and programming the direction, degree, timing, and sequence of the articulatory movements for speech sound production. These deficits can result in vowel and voicing errors, distortions, groping, inconsistent errors, disrupted transitions between sounds and syllables, increased difficulty with multisyllabic words, and equalised or incorrect stress patterns (ASHA, 2007; Iuzzini-Seigel et al., 2017; Shriberg et al., 2011).

CAS often results in severe communication impairment that can have lasting negative effects on social-emotional, academic, and vocational outcomes. In addition, there is a high rate of co-occurring disorders with CAS, such as Developmental Language Disorder (DLD), literacy impairments, phonological processing deficits, and fine and gross motor impairments, resulting in a complex presentation for children in this population.

A recent longitudinal study of speech, language, and motor skills in 15 children with DLD showed that fine and gross motor deficits present at preschool age were predictive of persistent language impairment 2 years later compared to preschoolers who demonstrated language deficits alone at the first time point (Sack et al., 2021). Importantly, initial *motor* ability was more predictive of later language ability than initial *language* ability was. Sack et al. suggested that the constellation of motor and language deficits demonstrated by children with persistent DLD highlights the interactivity of these domains and the importance of early identification of motor impairments. Such interactivity also suggests shared neural substrates (e.g.,

corticocerebellar or corticostriatal loop) underlying these seemingly divergent domains.

These neural substrates are also implicated in procedural learning, which is the system by which patterns are learned implicitly. For instance, the typical acquisition of morphosyntax, speech sound, and motor skill patterns (e.g., hand games like Miss Mary Mack, riding a bike, typing without looking at the keyboard) happens implicitly. Over time, with repeated practice, these patterns are gradually acquired until they can be performed automatically. If the procedural learning system is impaired, it would be expected that an individual would have multisystem deficits in skills that are reliant on implicit learning.

The Procedural Learning Deficit Hypothesis is a framework that has been used to explain co-occurring motor, language, attention, and literacy deficits observed in children with DLD, dyslexia, and ADHD (Nicolson & Fawcett, 2007) and most recently among children with CAS as well (Iuzzini-Seigel, 2021). Research investigating procedural learning in children with CAS, non-CAS speech disorders, and typical development showed that children with CAS performed differently from peers on procedural learning tasks such that instead of getting faster throughout a sequence learning task, they initially got slower before increasing speed, or they demonstrated slower performance across the entire task. These patterns were observed less frequently among children with non-CAS speech sound disorders or those with typical development. Interestingly, children with CAS who demonstrated these procedural learning patterns also tended to have co-occurring language and motor deficits. These findings are consistent with other research showing that individuals with CAS demonstrate implicit learning deficits (Bombonato et al., 2022) and have more difficulty with tasks that have a higher sequencing load across speech, motor, and cognitive-linguistic domains (Button et al., 2013; Peter et al., 2013). Taken together, these studies provide further support for the Procedural Learning Deficit Hypothesis as a possible explanation for the co-occurring deficits observed in children with CAS including why we might expect a high rate of DCD among children in this complex population as well.

This study conducted a preliminary investigation of characteristics of DCD in children with a confirmed diagnosis of CAS (with and without DLD) using a standardised motor assessment, parent questionnaire, and medical/developmental history for each participant. Due to the high co-occurrence between CAS and DLD, we also investigated to what extent DLD co-occurred in the current sample and whether this co-occurring diagnosis was related to the occurrence of DCD. Due to the common motor challenges observed in children with CAS and the extant literature on the high rate of DCD in other neurodevelopmental disorders (e.g., ASD; H. Miller et al., 2021), we predicted that a high proportion of children would meet diagnostic criteria for DCD. Such findings should highlight the clinical significance of motor problems in children with CAS and the need for targeted motor evaluations and treatments for children in this population.

Seven children diagnosed with CAS participated in the study. Children ranged in age between 4 and 8 years ($M = 5.62$, $SD = 1.25$). Exclusionary criteria included a diagnosis of Down syndrome, cerebral palsy, muscular dystrophy, degenerative disorder, epilepsy, and uncorrected visual deficit. After completing screening and consent/assent procedures, parents or guardians completed a brief questionnaire and developmental history and the DCDQ. All participants completed the Nonverbal scale of the Kaufman Brief Intelligence Test–Second Edition (Kaufman & Kaufman, 2004), speech and language evaluations, and motor ability testing. All participants were reported to have a normal hearing based on the parent report of a previous hearing assessment.

All participants underwent a thorough virtual communication assessment to confirm the CAS diagnosis and evaluate language. Procedures were completed in one 2- to 2.5-hr session. Sessions were recorded on Zoom using a cardioid directional external condenser microphone (Blue Snowball iCE) at a sampling rate of 32 kHz. Children were seated in Dr Tamplain's lab next to a trained research assistant and communication assessments were administered virtually by research assistants in Dr Iuzzini-Seigel's lab. Children took as many breaks as needed during the session. After completion, participants were provided with a \$25 gift card as a thank-you for their participation. The institutional review board approved all procedures at The University of Texas at

Arlington. Testing included the Sounds-in-Words subtest of the Goldman-Fristoe Test of Articulation–Third Edition (GFTA-3; Goldman & Fristoe, 2015), the core language components of the Clinical Evaluation of Language Fundamentals–Fifth Edition (CELF-5; Wiig et al., 2013), maximal vowel durations and Maximal Performance Diadochokinesis Tasks (i.e., “I want you to take a big breath and say “___” as clearly and as fast you can on one breath” for /pa/ and /pataka/; Thoonen et al., 1999), repeated productions of “Buy Bobby a Puppy” (Iuzzini-Seigel et al., 2017), and a customised speech assessment that required imitation of build upon words (e.g., lay, lady, ladybug), and challenging multisyllabic words. Finally, all participants completed a story-retelling task in response to a custom script (Smith et al., 2020) for the book “Goodnight, Gorilla” (Rathmann, 2004). All assessments were transcribed and/or scored from the Zoom recordings.

Descriptive statistics were used to summarise demographic, speech, language, and motor data. Participants ranged in age between 4 and 8 years ($M = 5.62$, $SD = 1.25$) and included six males and one female. One participant had CAS-only with no co-occurring disorders. All other participants were reported by parents to have at least one co-occurring diagnosis, which included Sensory Processing Disorder ($n = 2$), developmental delay ($n = 2$), ASD ($n = 3$), DCD ($n = 1$), intellectual disability ($n = 1$), and articulation disorder ($n = 1$). Testing revealed that four children demonstrated nonverbal IQ scores within or above the normal range and the remaining three were classified as performing below average ($n = 1$) or in the lower extreme ($n = 2$). The ProCAD protocol classified 2/7 (29%) participants as having dysarthria in addition to CAS. Finally, Core Language scores classified 4/7 (57%) participants as having severe DLD as well.

The results of this study demonstrate that most of our small sample of children with CAS meet diagnostic criteria for DCD, even when already receiving physical or occupational therapy. When DLD was present, every child met the criteria for a DCD diagnosis. In the community, however, most individuals with CAS do not carry a co-occurring DCD diagnosis that would facilitate access to or insurance coverage for motor interventions beyond the achievement of early gross motor milestones. Our findings suggest that children with CAS should be referred and evaluated for motor

problems early on so they can receive proper intervention for motor difficulties that may be associated with DCD. Early identification and treatment of gross and fine motor problems may help to reduce or prevent physical and mental health issues and improve long-term treatment outcomes and overall quality of life in this population.

Compiled from American Speech-Language-Hearing Association. An Investigation of Developmental Coordination Disorder Characteristics in Children With Speech Sound Disorders. Language, Speech, and Hearing Services in Schools. 2022. № 53 (3). Pp. 1-19.

Activity 7. Read the text and complete the table.

	Statements	True	False
1	Children with CAS know what they want to say but struggle to articulate it due to motor planning issues.		
2	Procedural learning deficits are proposed as a potential explanation for the co-occurring motor and language issues observed in children with CAS.		
3	The study described seven children diagnosed with CAS, with ages ranging from 4 to 8.		
4	In the study, participants with a prior diagnosis of Sensory Processing Disorder were excluded.		
5	The study's findings suggest that children with CAS should be referred for motor evaluations to address potential motor issues associated with DCD.		

Activity 8. Work in pairs. Discuss why the following things were mentioned in the text.

1. Developmental Language Disorder
2. Procedural Learning Deficit Hypothesis
3. Sensory Processing Disorder
4. GFTA-3

5. CELF-5
6. KBIT-2
7. DCDQ
8. Nonverbal IQ scores
9. Maximal Performance Diadochokinesis Tasks

Activity 9. Choose the topics to talk about. Prepare your ideas, then work in pairs and share your perspectives.

1. Definitions, symptoms, and diagnostic criteria for CAS and DCD.
2. Common challenges and overlapping symptoms children with CAS and DCD face in their daily lives.
3. Assessment tools and techniques used to diagnose CAS and DCD.
4. Intervention strategies and therapies for children with CAS and DCD.
5. How CAS and DCD affect a child's academic performance and social interactions.
6. Importance of multidisciplinary teams in diagnosing and treating children with CAS and DCD.
7. Current research findings and future directions in studying CAS and DCD.

Activity 10. Translate each Russian term into its English equivalent. Provide an explanation of the equivalence, similar to the example.

Russian term	English equivalent
моторика	motor skills

Equivalence explanation: the terms are equivalent and convey the same concept. They both refer to the range of abilities and skills related to the control and coordination of muscle movements in the body.

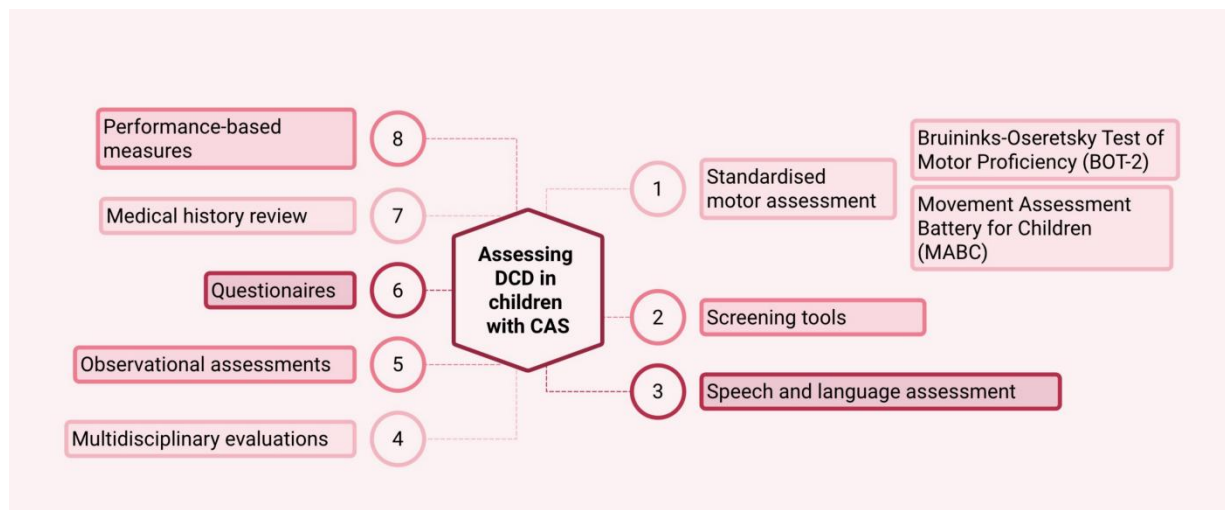
One-word terms:

моторика, планирование, усвоение, морфосинтаксис, образец, гипотеза, СДВГ, ДЦП, эпилепсия, скрининг, опекун, анкета, участник, обследование, диадохокинез, воспроизведение, статистика, данные, диагноз, аутизм, протокол, выборка.

Terminological units:

детская апраксия речи, возрастное нарушение координации, трудности моторного планирования, нейромышечные нарушения, нарушение фонологической обработки, коморбидная патология, раннее выявление двигательных нарушений, нейронный субстрат, процедурное обучение, слепая печать (на клавиатуре), усваивать имплицитно, дети с типичным развитием, выполнении заданий с последовательностью действий в речевой, моторной и когнитивно-лингвистической сферах, исключающий критерий, мышечная дистрофия, дегенеративное заболевание, частота дискретизации, нарушение сенсорной обработки, задержка развития, в пределах или выше нормы, нижний предел, диагностический критерий.

Activity 11. Work in pairs. Answer the questions.



1. What standardised motor assessments are used to diagnose DCD in children with CAS?

2. What screening tools can help in the early identification of motor coordination issues?

3. Why is a multidisciplinary evaluation important in diagnosing DCD in children with CAS?

4. What role do observational assessments play in understanding the child's motor and speech difficulties?

5. How can parent and teacher questionnaires be used in the diagnostic process?

6. Why is it important to review the child's medical history in diagnosing DCD?

Activity 12. In groups choose two aspects related to assessing DCD in children with CAS and research them in depth. Compile your findings and integrate them into the mind map.

Activity 13. Consult the Corpus of Contemporary American English (COCA) and other reliable sources to explore the following abbreviations and acronyms used in the context of assessing DCD in children with CAS. Complete the table.

Abbreviation/acronym	Full form	Context
DCDQ		
DCD		
BOT-2		
MABC		
CELF-5		
KSPT		
GFTA-3		
VMI		
SPD		
VABS		

Activity 14. How do the various assessment tools complement each other in diagnosing DCD in children with CAS?

Unit 18. Communication Challenges in Children with Cerebral Palsy

Activity 1. Discuss in groups.

What communication challenges do children with cerebral palsy commonly face?

Activity 2. Classify the following terms according to their relation to communication difficulties co-occurring with cerebral palsy.

Difficulty being heard, limited speech due to physical limitations, speech-language pathology, iPad and eye gaze technology, social inclusion, collaboration with the AT team, classroom adaptations, the role of therapists, frustration, independence through technology, supportive social environment, use of a head mouse, the emotional impact of not being heard, teacher involvement in therapy

Activity 3. In pairs complete the K-W-L chart by listing what you already know about communication challenges in children with cerebral palsy. After completing the unit, fill in what you have learnt.

K-W-L chart on communication challenges in children with CP

K - Know	W - Want to know	L- learnt

Activity 4. Watch the video “How Technology Is Helping Children with Cerebral Palsy.”² How is technology helping Javier overcome his communication difficulties?



² RUL: <https://www.youtube.com/watch?v=qV2-XhDU37k> (Accessed 13.04.2024, 10:00h)

Activity 5. Work in pairs. Compare your ideas and discuss.

1. What specific communication challenges did Javier face?
2. What types of technology contributed to his independence?

Activity 6. Watch the video again and complete the table.

	Statements	True	False
1	Javier faces significant challenges due to his limited physical mobility.		
2	Javier utilises an eye gaze system attached to an iPad for completing his schoolwork.		
3	Javier avoids expressing his frustration about not being heard in front of his peers.		
4	The assistive technology team and therapists provided Javier with a head mouse to help him communicate.		
5	Javier aspires to become a motivational speaker to inspire his friends.		

Activity 7. Work in pairs. Discuss why the following things were mentioned in the video. Watch again and check your answers.

1. Limited physical mobility
2. Assistive technology team
3. Frustration
4. Aspiration
5. Self-esteem

Activity 8. Work in pairs. Discuss the questions.

1. What are the key challenges faced by children with cerebral palsy in a typical school environment?
2. How does assistive technology transform the educational experience for these children?
3. What role do teachers play in identifying and implementing assistive technologies for students with special needs?

4. How can children with cerebral palsy and their families be supported to ensure they have access to the necessary resources and technologies?

Activity 9. Work in groups. Analyse the information in the table and answer the questions.

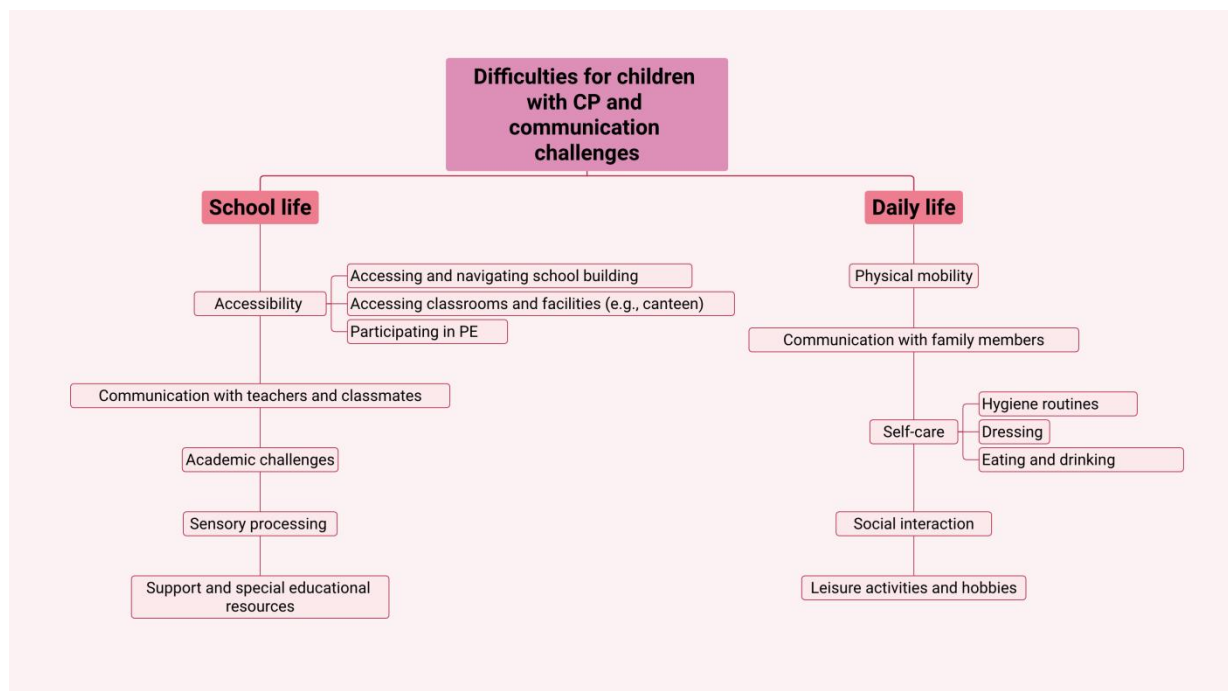
1. What are the main challenges faced by children with cerebral palsy at school?

2. How do communication difficulties impact social interactions at school and home?

3. What daily living skills might be difficult for children with cerebral palsy to perform independently at home?

4. What are the emotional and psychological challenges these children face?

5. What strategies can families use to facilitate social interaction and play for children with cerebral palsy and communication difficulties



Activity 10. Work in groups. Research some aspects of school life and daily life difficulties faced by children with CP who have communication challenges. Use the provided template to organise your findings.

Activity 11. Present your expanded table to the class. Include definitions, examples and real-world applications.

Activity 12. Discuss in groups.

1. What specific challenges do SLPs face when working with children who have cerebral palsy and communication difficulties? How are these challenges addressed in their training?

2. Which innovative technologies can improve the quality of life and educational outcomes for these children?

Activity 13. Reflect on the importance of interdisciplinary collaboration in supporting children with cerebral palsy and communication challenges.

Unit 19. Speech and Language Profiles in ASD

Activity 1. Discuss in groups.

1. What language and communication difficulties are commonly observed in children with Autism Spectrum Disorder?
2. How do comorbid conditions like DLD or intellectual disability impact language skills in children with ASD?

Activity 2. Work in groups. Explore key concepts and specialised vocabulary used in discussing ASD in the context of communication disorders. Complete the table.

Term	Example Sentence	Context	Related Topic
pragmatics			
joint attention			
echolalia			
morphosyntax			
semantics			
phonological processing			
functional language			
comorbidity			
verbal skills			
prosody			
nonverbal communication			
social reciprocity			

Activity 3. Read the article introduction. What types of language and communication difficulties are commonly associated with ASD?

Language and Speech Characteristics in Autism

Willingness and ability to interact with a communicative partner emerge early in human evolution as a step in social development and before language acquisition or the use of language. Joint attention, imitation and play are the first aspects of sociability that have been related to the development of language and communication skills, either in children demonstrating typical development (TD) or in children with developmental disabilities. In TD children, joint attention usually emerges around the age of 9 months and it is well developed when the child reaches the age of 12 months, a crucial factor in the development of joint attention is considered to be the interactions with stable and available adults. Relevant research data show that this skill increases gradually as the number of interactions increases. According to researchers Charman et al, joint attention skills observed in the second year of life are closely linked to higher social skills in the future. Joint attention skills are hailed as a milestone of socialisation by showing us how a human being transforms into an advanced social being. Research has highlighted the importance of developing joint attention skills and imitation in the development of language production, and other research suggests that children with well-developed joint attention skills end up having better language skills by age 3–4 years. Imitation skills of motor patterns also influence the development of sociability and socialisation and have been linked to the development of language skills later in children's lives.

The connection between social skills and speech and language development is strong and apparently, language and speech development is a result of social developmental processes in the first year of life. One of the most common symptoms in the majority of ASD children is issues they face in social communication and the manifestation of difficulties in the integration of verbal and nonverbal communication. That particular communication impairment is a core feature of autism and one of the most frequent reasons for referral among children who are later diagnosed with Autism Spectrum Disorder has been the focus of numerous studies. Moreover, the increasing number of evidence from longitudinal studies of

young children with and without ASD indicates that those with impairments in verbal skills are at increased risk for less favourable outcomes later in life. Early language abilities and their development predict social functioning, academic achievement, and psychiatric outcomes in late childhood and adulthood.

Moreover, the importance of social and communication challenges in ASD was recognised as a core ASD symptom under the heading “Social Communication Difficulties and Interaction” in the Diagnostic Statistical Manual, 5th Edition (DSM 5) of the American Psychiatric Association (APA). It was determined as an obligatory core symptom to receive a diagnosis of ASD.

The importance of language use in defining clinical subtypes of ASD is also noted in the International Classification of Diseases (ICD), 11th edition of the World Health Organization, with the presence or absence of functional language taking centre stage. ICD 11 categorises ASD into five different types, a) ASD with a disorder of intellectual development and with impaired functional language, b) ASD with a disorder of intellectual development and with absence of functional language, c) ASD without disorder of intellectual development and with mild or no impairment of functional language, d) ASD with disorder of intellectual development and with mild or no impairment of functional language and e) ASD without disorder of intellectual development and with impaired functional language. The method of categorization relates to the existence or absence of disorder of intellectual development and the existence or absence of functional language. The use of the term functional language in ICD 11 and the description of symptoms of social communication difficulty in DSM 5 helps the clinicians to focus not on the existence of speech and language availability, but on the appropriate use of speech and language for functional and social communication. Additionally, clinicians focus on the presence of social communication difficulties, beyond language and speech and pinpoint the communication difficulties in ASD as related to the social aspect of communication mainly, which serves as a good differentiation between language impairment and ASD with the presence of language impairment/specifier “With or without accompanying language impairment.”

Although the hypothesis of the influence of social development is a crucial cause for language and speech difficulties in ASD children, there are other conditions which may affect speech and language development. Comorbidity conditions of ASD children with other developmental disorders such as Developmental Language Disorder (DLD), Apraxia of Speech (AS) or low intelligence quotient (IQ) level also influence language and speech abilities in ASD because development is generally seen on a continuum.

Research and knowledge about ASD in recent years have provided data that have resulted in a better understanding of the language specifics of children with autism. One of these concerns the widely used present classification of children with autism into two large groups in terms of their language development: Normal Language development (ASD-LN) and Language Impaired (ASD-LI). ASD children with LI profiles seem to experience difficulties in language development. Following the same logic, it is observed in the literature that a sub-classification of the group of children with autism with typical language development is used, dividing them into children with Low Language Abilities (ASD-LL) and children with High Language Abilities (ASD-HL). This categorization is usually related to ASD children's scores on standardised language tests.

The purpose of this paper is to provide information on diversity in the speech and language profiles of people with ASD. We offer a discussion of the existence of language profiles identified in individuals with ASD and a categorical approach to support ongoing diagnostic and intervention efforts.

Resource: Vogindroukas I., Stankova M., Chelas E.N., Proedrou A. Language and Speech Characteristics in Autism. Neuropsychiatr Dis Treat. 2022. № 18. Pp. 2367-2377.

Activity 4. Work in pairs. Discuss why the following things were mentioned in the article. Support your ideas by referring to the text.

1. Imitation skills
2. Types of language development in ASD
3. Social development hypothesis
4. Longitudinal studies
5. ASD-LN
6. ASD-LI

7. ASD-LL
8. ASD-HL

Activity 5. Is the information provided in the introduction enough to answer the following questions? Discuss in pairs.

1. What is the aim of the article?
2. Make a list of key concepts presented in the introduction.
3. What are the key findings and arguments presented in the article?
4. What are the strengths of the article? How can the article be improved (if applicable)?
5. What are the overall conclusions? What are the implications for the SLP field?

Activity 6. Fill in the table by matching the information from the introduction to the corresponding review component. If there is no relevant information in the introduction, leave that cell blank.

Article review component	Purpose of the component in the review	Information in the introduction
Introduction	To provide an overview of the article's main topic, purpose, and significance	
Summary	To provide a summary of the article's main points, findings, and arguments	
Evaluation	To analyse the article's contribution to the field, the quality of the research, and the validity of the conclusions	
Analysis	To discuss and evaluate the research design, data collection, and analysis methods	

Article review component	Purpose of the component in the review	Information in the introduction
Conclusion	To summarise the overall assessment and implications	

Activity 7. Scan the article³ and search for the missing information needed to complete your article review.

Activity 8. Examine the following phrases from the article and explain their meanings and implications.

1. The purpose of this paper is to provide information on diversity in the speech and language profiles of people with ASD.

2. We offer a discussion of the existence of language profiles identified in individuals with ASD and a categorical approach to support ongoing diagnostic and intervention efforts.

3. Joint attention, imitation and play are the first aspects of sociability that have been related to the development of language and communication skills, either in children demonstrating typical development (TD) or in children with developmental disabilities.

4. The connection between social skills and speech and language development is strong and apparently, language and speech development is a result of social developmental processes in the first year of life.

5. Research and knowledge about ASD in recent years have provided data that have resulted in a better understanding of the language specifics of children with autism.

6. Although the hypothesis of the influence of social development is a crucial cause for language and speech difficulties in ASD children, there are other conditions which may affect speech and language development.

7. The importance of language use in defining clinical subtypes of ASD is also noted in the International Classification of Diseases (ICD), 11th

³ URL: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9578461> (Accessed 15.04.2024, 12:00h).

edition of the World Health Organisation, with the presence or absence of functional language taking centre stage.

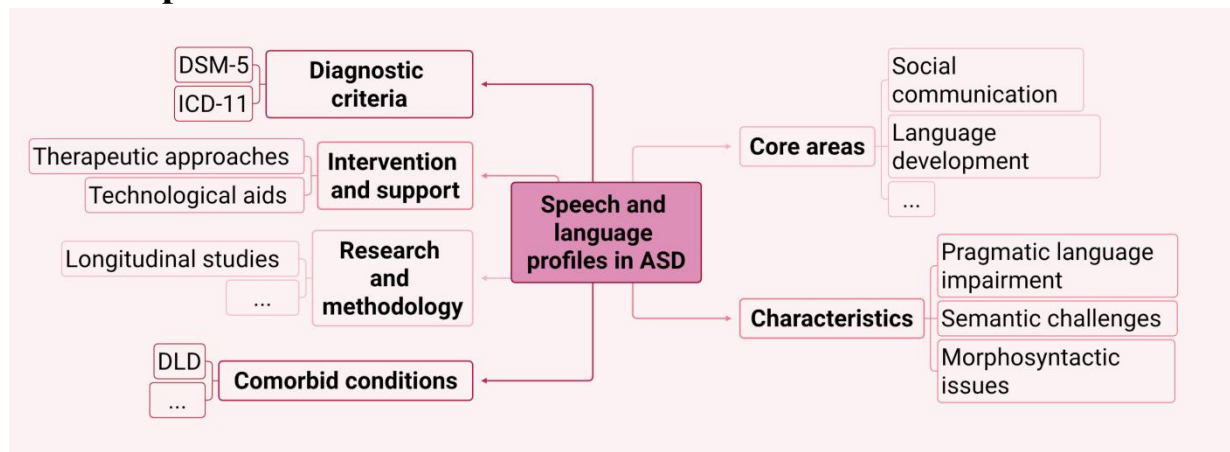
8. The current paper tries to give a clinical glance at the recent research knowledge regarding language profiles and in the way which this knowledge could be used for therapeutic intervention.

9. Recent knowledge of ASD helps clinicians better understand the differences in the ASD field.

Activity 9. Work in groups. Brainstorm terms related to *speech and language profiles in ASD*. Discuss how terms relate to each other:

e.g., joint attention → facilitates → language development

Activity 10. Work in groups. Organise your ideas and expand the mind map below.



Activity 11. Write a journal article review. Use the following template.

Journal article review

Name of article:

Journal name (date/volume):

1. The main area of focus in the article
2. Main points, findings and arguments
3. Contribution to the field
4. Research design and methodology analysis
5. Several areas where the information from the article applies to your program or could be used to improve it?

**Activity 12. Review 1-2 journal article reviews of other students.
Use the following template to provide your feedback.**

Information accuracy and relevance	
Clarity and organisation	
Linguistic accuracy	
Overall impression	

Unit 20. Communication Disorders and Paediatric Hearing Impairments

Activity 1. Discuss in pairs.

1. What factors affect communication skills in preschoolers with hearing loss?
2. How do communication outcomes for children with cochlear implants and hearing aids compare to their hearing peers?

Activity 2. Read the provided summary of the article “Family and Rehabilitation of Children with Cochlear Implant: A Qualitative Study.” Identify the role of families in rehabilitating children with cochlear implants.

The article published in the Florence Nightingale Journal of Nursing by Moradi et al. (2022), investigates the crucial role of families in the rehabilitation process of children with cochlear implants. This qualitative study, conducted in Tehran, Iran, during 2018-2019, emphasises the experiences and perceptions of families involved in the rehabilitation process, highlighting the significant impact of family support on the successful rehabilitation of children with cochlear implants.

The study underscores that family involvement is essential for effectively rehabilitating children with cochlear implants. The findings reveal that families, particularly mothers, play a pivotal role in the rehabilitation process, providing emotional and practical support. The study categorises the findings into two main sub-classes: supportive family and continuing professional and non-professional rehabilitation.

The study found that mothers are often the primary caregivers and play a crucial role in their child’s rehabilitation. They engage in various activities such as accompanying their children to rehabilitation sessions, maintaining close communication with their children, and providing continuous education at home. The active involvement of family members, especially mothers, ensures that children receive consistent support and care, which is vital for their progress. The dedication and patient effort of families in managing the rehabilitation process, from post-surgery care to daily educational activities, significantly contribute to the child’s development.

The rehabilitation process for children with cochlear implants involves both professional interventions and family-led efforts. The study highlights the importance of long rehabilitation sessions, the use of various educational techniques, and the inclusion of music in rehabilitation programs. Additionally, virtual rehabilitation methods have proven to be effective, especially for families in remote areas. Repetition in language learning and the necessity of attending kindergarten are also emphasised as critical components of the rehabilitation process. These methods help improve the child's language skills and social interactions.

The study emphasises the need for comprehensive training and support for families to ensure the success of the rehabilitation process. Families should be educated on the principles of auditory training, maintaining cochlear implants and effective communication strategies. Scientific guidance from healthcare professionals, including speech-language pathologists, is crucial in providing families with the necessary knowledge and skills.

Speech-language pathologists are integral to the rehabilitation process, working closely with families to develop individualised rehabilitation plans. They conduct assessments, design intervention programs, and monitor the child's progress. SLPs also provide training for parents on how to facilitate language development at home and address any speech and language disorders that may arise. Their expertise ensures that children with cochlear implants receive the appropriate interventions to enhance their communication skills.

The study concludes that family support is indispensable for the successful rehabilitation of children with cochlear implants. Family-centred education and rehabilitation, supported by professional guidance from SLPs and other healthcare providers, are essential for optimising the outcomes for these children.

Compiled from: Moradi M., Fallahi-Khoshknab M., Dalvandi A., Farhadi M. et al. Family and Rehabilitation of Children with Cochlear Implant: A Qualitative Study. Florence Nightingale J Nurs. 2022. № 30 (1). Pp. 18-24.

Activity 3. Work in groups. Discuss the questions.

1. What challenges do families face in supporting children's rehabilitation with cochlear implants?
2. Why is the mother's role crucial to the child's progress?
3. What specific training and resources should be provided to families to help them support their child's rehabilitation effectively?
4. In what ways can speech-language pathologists collaborate with families to ensure effective rehabilitation for children with cochlear implants?
5. How can virtual rehabilitation methods be integrated into rehabilitation programs for children with cochlear implants?

Activity 4. Collaborative project. Work in two groups. Develop a parent support plan for a family of a child with a cochlear implant to enhance the rehabilitation process.

You are a multidisciplinary team at a paediatric speech and language clinic. Recognising the critical role of parents in the rehabilitation process, you aim to develop a support plan to assist parents in helping their children with cochlear implants.



Guidelines:

1. Discuss challenges faced by families of children with cochlear implants and gather information on supporting them.
2. Develop the parent support plan, addressing all key areas.

Source:

<https://health.ucdavis.edu/otolaryngology/specialty/audiology/cochlear-implants.html>

Activity 5. Present your parent support plans and key recommendations to the class.

Activity 6. Arrange the following phrases according to their function. Add more examples to the table.

1. Let's work together to find the best solution.
2. Good morning, everyone. Thank you for being here today.
3. Let's start with a brief overview of [child's name]'s current condition.
4. From a speech and language perspective, we are working on improving articulation.
5. Our main goals for [child's name] include improving and expanding vocabulary.
6. We have noticed that phonological awareness is an area that needs more support.
7. I'd like to summarise the latest assessment results for [child's name].
8. Based on our recent assessments, [child's name] has shown improvement in responding to auditory cues.
9. At home, it's important to encourage [child's name] to wear the cochlear implant consistently.
10. You can support [child's name] by engaging in daily reading activities.
11. How can we address this issue at home?
12. Let's schedule our next appointment to monitor [child's name]'s progress.

Functions	Phrases
Opening the meeting	
Starting the discussion	
Providing an update on the child's progress	
Defining speech and language therapy	
Highlighting areas of concern	
Giving advice	
Sharing concern	
Planning future actions	

Activity 7. Prepare for the role-play according to the guidelines in your role-play card.

Scenario

You are taking part in a consultation meeting between an audiologist, a speech-language pathologist, and the parents of a child who has recently received a cochlear implant. The meeting aims to discuss the child's current needs, outline the support plan, and provide guidance on how parents can support their child's speech and language development at home.

Role card 1	Role card 2	Role card 3	Role card 4
<p>Role: audiologist Goal: open the meeting, and provide an update on the patient's progress.</p>	<p>Role: speech-language pathologist Goal: define SLP needs and goals of therapy. Explain what parents should expect.</p>	<p>Role: mother Goal: highlight areas of concern, and explain what you've noticed about your son's behaviour at home. Share your concerns about your son's tendency to avoid interacting with peers.</p>	<p>Role: father Goal: ask the experts for advice regarding activities that you can practise at home to enhance your son's progress. Ask about follow-up sessions.</p>

Activity 8. Role-play the consultation meeting between an audiologist, speech-language pathologist and the parents of a child with a cochlear implant. Use the phrases.

Activity 9. Discuss in groups. Share your observations and insights from the role-play activity on giving professional advice to parents of a child with a cochlear implant.

Activity 10. Reflect on how the ethical implications of working with children with hearing impairment should be observed. How can the

specialists be sure they are providing support and respecting the family's wishes and cultural background?

REFERENCES

1. American Speech-Language-Hearing Association. An Investigation of Developmental Coordination Disorder Characteristics in Children With Speech Sound Disorders. *Language, Speech, and Hearing Services in Schools*. 2022. № 53 (3). Pp. 1–19.
2. Balakrishnan S., Thangaraj M. Parental Support for Post Operative Intervention of Children with Cochlear Implantation. *Indian J Otolaryngol Head Neck Surg*. 2023. № 75 (3). Pp. 1–10.
3. Friedman, Z., & Nealon, K. (2023, April 20). Interdisciplinary Clinician Perspectives of Comorbid Presentations of Sensory Processing Disorder & Childhood Apraxia of Speech. *Kean University, Union, New Jersey, United States, 2023*.
4. Geers A.E., Nicholas J.G., Sedey A.L. Language skills of children with early cochlear implantation. *Ear Hear*. 2003. № 24 (1). Pp. 46S–58S.
5. Keilmann A., Kluesener P., Freude C., Schramm B. Manifestation of speech and language disorders in children with hearing impairment compared with children with specific language disorders. *Logoped Phoniatr Vocol*. 2011. № 36 (1). Pp. 12-20.
6. Moradi M., Fallahi-Khoshknab M., Dalvandi A., Farhadi M. et al. Family and Rehabilitation of Children with Cochlear Implant: A Qualitative Study. *Florence Nightingale J Nurs*. 2022. № 30 (1). Pp. 18–24.
7. Newmeyer A.J., Aylward C., Akers R., Ishikawa K. et al. Results of the Sensory Profile in children with suspected Childhood Apraxia of Speech. *Phys Occup Ther Pediatr*. 2009. № 29 (2). Pp. 203–218.
8. Ostojic K., Paget S., Martin T., Dee-Price B.J. et al. EPIC-CP Group. Codesigning a social prescribing pathway to address the social

determinant of health concerns of children with cerebral palsy and their families in Australia: a protocol for a mixed-methods formative research study. *BMJ Open*. 2023. № 13 (4).

9. Soke G.N., Maenner M.J., Christensen D., Kurzius-Spencer M. et al. Prevalence of Co-occurring Medical and Behavioral Conditions/Symptoms Among 4- and 8-Year-Old Children with Autism Spectrum Disorder in Selected Areas of the United States in 2010. *J Autism Dev Disord*. 2018. № 48 (8). Pp. 2663–2676.

10. Vogindroukas I., Stankova M., Chelas E.N., Proedrou A. Language and Speech Characteristics in Autism. *Neuropsychiatr Dis Treat*. 2022. № 18. Pp. 2367–2377.

Online sources

1. American Journal Experts. Writing a research paper for an academic journal: A five-step recipe for perfection. URL: <https://www.aje.com/arc/writing-a-research-paper-for-an-academic-journal-a-five-step-recipe-for-perfection/> (Accessed 24.04.2024, 10:00h).

2. Randolph Community College. Summaries. Randolph Community College Library Guides. URL: <https://libguides.randolph.edu/summaries> (Accessed 24.04.2024, 12:00h).

3. Research Experience: Article Review Option. San Jose State University. URL: https://www.sjsu.edu/barg/docs/Research_Experience_Article_Option.pdf (Accessed 24.04.2024, 12:55h).

MODULE 6

LANGUAGE CHALLENGES IN THE CONTEXT OF SPECIFIC LEARNING DISABILITIES

In this module, you will practise:

Skills focus

Reading	Phonological Awareness and Dyslexia
Listening	What Is Dysgraphia? Causes, Risks, Diagnoses
Writing	A literature review
Speaking	<p>Collaborative project: The team talk at the CLD 46th International Conference on Learning Disabilities</p> <p>Role-play: Collaborative meeting of a multidisciplinary team providing support to a student with NVLD</p>

Language focus

<p>Professional terminology</p> <p>Phonological perception, language ability, phonological skills, phonological disorders, learning disability, reading disorder, phonological deficit hypothesis, short-term verbal memory, nonword repetition, digit span, rapid automatised naming, literacy impairment, the primary manifestation of dyslexia, the inefficiency of working memory, acquisition of reading skills, persists into adulthood, motor task, phonological representation, rhyme detection, repetition of sequences of meaningless sound patterns, eye movement, metalinguistic abilities, phonological competence, high cognitive load, etc.</p>
<p>Functional language for academic and professional writing</p> <p>Dyscalculia affects about 5 percent of school children. Ladislav Kosc (1970) identified three types of dyscalculia: primary, secondary, and tertiary. Strang and Rourke (1985) added two more types: visual-spatial dyscalculia and auditory-verbal dyscalculia. Emerson House created a multi-sensory teaching approach that is effective for this. The NCF 2005 recommends using concrete materials, such as manipulatives and real-life examples, to help learners understand mathematical concepts, etc.</p>
<p>Functional language for academic and professional speaking</p> <p>I'll focus on exercises that improve Edward's hand-eye coordination and fine motor skills. Let's begin by reviewing the specific challenges he is facing. Incorporating sensory integration techniques will help address any sensory processing issues he might have, etc.</p>

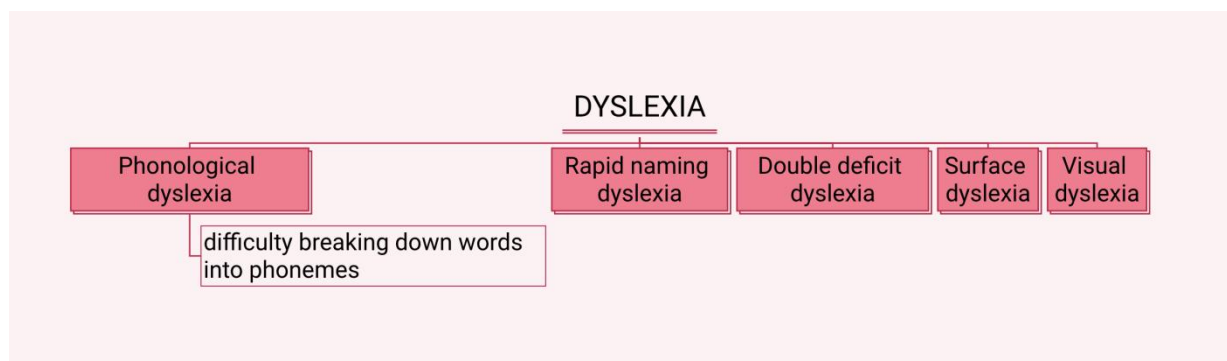
Unit 21. Phonological Awareness and Reading Disorders

Activity 1. Work in pairs. Answer the questions.

1. What is phonological awareness?
2. Why is it crucial for reading development?
3. How do phonological deficits manifest in individuals with dyslexia?

Activity 2. Categorise each symptom under the appropriate type of dyslexia.

Slow retrieval of names for letters, numbers, and colours; difficulty recognising words by sight; difficulty with phoneme manipulation tasks; delays in reading fluency; persistent spelling errors; trouble reading unfamiliar words; trouble with tracking lines of text; letter and word reversals; a combination of phonological and rapid naming deficits; problems with irregular word spellings; text appearing blurred or going in and out of focus; difficulty processing visual information; difficulty quickly naming objects; severe difficulty with reading accuracy and fluency; over-reliance on phonetic reading strategies; eyestrain associated with reading; text appearing double or alternating between single and double; difficulty reading words that don't sound the way they're spelt



Activity 3. Work in groups. Complete the table with descriptions of diagnostic tools and the skills they test.

Diagnostic tool	Test description	Skill assessed
CELF-5		

Diagnostic tool	Test description	Skill assessed
CASL		
CTOPP-2		
EOWPTV-4		
GORT-5		
GSRT		
RAN/RAS		
TAPS		
TEWL		
TOPL		
TOWL-4		
TWS-5		
WRMT		
Word test		

Activity 4. Read the text. How do primary phonological deficits affect reading and spelling abilities?

Phonological Awareness and Dyslexia

As noted in the previous section, phonological awareness is a key language ability and a reliable predictor of reading achievement. Several studies have focused on the phonological skills of individuals with language impairments and found that a compromised phonological profile is common not only in the domain of language impairments but also in learning disabilities. In particular, phonological deficits are the hallmark of individuals suffering from developmental dyslexia, which is a highly specific impairment of reading and spelling ability occurring in people with an average or above average IQ, normal sensory acuity, and experience of appropriate educational instruction (World Health Organisation 1993).

Currently, there is a large consensus on the Phonological Deficit Hypothesis according to which dyslexia is characterised by deficits in the representation, access, storage and manipulation of speech sounds (Bradley and Bryant 1983; Snowling 2000; Stanovich 1988; Vellutino 1979).

A solid body of research reports difficulties across all components of phonological representation and processing. PA skills are particularly limited in children with dyslexia, who underperform their typically developing peers in several tasks, such as phoneme manipulation, rhyme detection and spoonerisms (Bradley and Bryant 1978; Catts et al. 2005; Joanisse et al. 2000; Ramus et al. 2013). Moreover, it is acknowledged that people with dyslexia have poor verbal short-term memory, as measured by tasks such as digit span and nonword repetition (Snowling 2000; Szenkovits and Ramus 2005) and difficulties have been reported in speech perception and production (Adlard and Hazan 1998; Manis et al. 1997). Children with dyslexia are also slow at rapid automatized naming tasks, which measure the speed of access to common words and their phonological forms (Denckla and Rudel 1976; Wolf and Bowers 2000). Indeed, some scholars have identified working memory inefficiency as a core manifestation of dyslexia (Beneventi et al. 2010; Jeffries and Everatt 2004; Vender 2017).

Phonological deficits, however, are considered the main cause of disruption in reading processing and acquisition, since they prevent the child from establishing the solid phonological representation and awareness skills that are necessary for engaging in fast and accurate grapheme-to-phoneme decoding. These deficits are reported across different languages and ages, affecting preschoolers at risk of dyslexia, manifesting in early and later grades in school, and crucially persisting in adulthood, even when the reading deficits may have been compensated by the subject (Bruck 1992). Furthermore, phonological deficits are generally present in people with dyslexia and are responsible for literacy impairment, as shown by Ramus et al. (2003). In this study, a group of university students with and without dyslexia were tested on a range of phonological, visual and motor tasks, and it was found that participants with dyslexia underperformed their control peers in all phonological measures, including spoonerisms, rapid naming and nonword repetition, whereas only a subset presented additional motor

and visual deficits. Ramus et al.'s study also showed that the phonological impairments associated with dyslexia are not transitory but persist through time, characterising the linguistic profile of adults with dyslexia, too. Longitudinal studies have evidenced that individuals with dyslexia do not simply lag behind their peers but manifest phonological impairments that emerge as the most distinctive trait of dyslexia across the lifespan (Grivol and Hage 2011; Snowling et al. 1996).

Research has explored various domains of PA and has especially focused on those tasks that are more taxing for people with dyslexia, i.e., tasks requiring fifteen PA skills and/or high processing resources. As recent studies have shown, indeed, the difficulties experienced by children with dyslexia seem to derive not only from impaired phonological representations (Elbro 1996) but also from the cognitive skills necessary for accessing and manipulating these representations (Mundy and Carroll 2012; Ramus and Ahissar 2012; Ramus and Szenkovits 2008). Among the most inspected tasks of phonological processing and awareness in dyslexia are nonword repetition, rhyme detection and spoonerisms.

Nonword repetition has been the investigation focus of several studies on children with language and learning impairments. This task requires the subject to repeat sequences of meaningless sound strings that are modelled after the phonotactic structure of the input language. Despite its apparent simplicity, nonword repetition involves short-term memory resources necessary to maintain the pseudowords in memory, but also phonological representation and awareness skills for creating acoustic representations and supporting articulation. Major deficits in this task have been reported in children suffering from dyslexia, who underperformed both chronological-age- and reading-age-matched children as found in numerous studies (Kamhi and Catts 1986; Gathercole et al. 1994; Szenkovits and Ramus 2005; Tijms 2004; Cilibrasi et al. 2018; Melloni and Vender 2020; Vender et al. 2020) with constant results across the various languages tested (Paulesu et al. 2000). Difficulties are particularly severe as the length of the nonwords increases, probably related to the higher involvement of memory resources required, although they arise with shorter stimuli too (Couture and McCauley 2000). Moreover, it has been reported that performance in nonword repetition significantly

correlates with literacy achievements (de Bree et al. 2010) and that this task could be employed to assist in the identification of dyslexia (Vender et al. 2020).

Another common measure of PA is rhyme detection, which relies on the ability to detect a shared suprasegmental unit among words, hence revealing the subject's sensitivity to global phonological similarity rather than to segmental units. While sensitivity to suprasegmental units emerges already in preschool years, rhyme detection is impaired in children with dyslexia, supporting the view that the source of the phonological impairment of dyslexia lies in the representation of prosodic units such as syllables and rhymes rather than of individual segments (Goswami 1999; Muter et al. 1998). Rhyme detection has been the research focus of Desroches et al. (2006), who administered an eye-tracking task for children with dyslexia to measure phonological knowledge more directly and independently from extraneous factors such as attention, memory and metalinguistic abilities. Interestingly, they found that children with dyslexia diverge from their normally developing peers in the online processing of the phonological structure of rhymes, while other components of phonological competence are spared in these children. Furthermore, rhyme detection has been reported as a good predictor of reading acquisition in preschool children (Bryant et al. 1990). Another challenging PA task for children with dyslexia is the spoonerism task, requiring the subjects to swap the initial sounds of two words, as in Fish–Boat → Bish–Foat (Landerl et al. 1997). In terms of PA skills, this task is not particularly complex since it requires segmentation at the level of onset and rhyme rather than that of individual segments. However, spoonerisms are especially taxing because they also require blending skills that need to be supported by short-term phonological memory and monitoring (Landerl and Wimmer 2000). In performing the task, indeed, the child has to keep the sound strings in memory and monitor which segments have been blended and which ones still have to be assembled. It is acknowledged that phonological memory and processing resources are limited in children with dyslexia (Mundy and Carroll 2012; Ramus and Ahissar 2012; Ramus and Szenkovits 2008; Vender 2017) their low scores in spoonerisms are often explained as resulting from the high cognitive taxation of this task rather than from impairments in phonological

knowledge. Indeed, the spoonerism task has been found very challenging for people with dyslexia (Knoop-van Campen et al. 2018; Walton and Brooks 1995).

To summarise, phonological deficits have been reported in various domains of the phonological profile of people with reading impairments, with phonological memory and awareness emerging as especially compromised, negatively affecting their performance in various tasks and showing persistence across the lifespan. Crucially, a compromised phonological profile is an indicator of future reading deficits and its accurate assessment could assist in early diagnosis of dyslexia. Furthermore, intervention studies focused on the rehabilitation of phonological abilities have been especially effective for both children (Blachman 2000; Bradley and Bryant 1983) and adults with dyslexia (Eden et al. 2004). This confirms the importance of a careful screening of the phonological abilities of children at risk of dyslexia and suggests the vital role that early intervention programs could play in assisting the child from the first steps in literacy.

Source: Vender M., Melloni C. Phonological Awareness across Child Populations: How Bilingualism and Dyslexia Interact. Languages. 2021. № 6 (1). P. 39.

Activity 5. Complete the text summary with the words from the box.

Phonological deficits, phoneme manipulation, spoonerisms, perception, short-term memory, developmental dyslexia, early identification, sounds, phonological skills, reading outcomes, nonword repetitions

Phonological awareness (PA) plays a crucial role in predicting reading achievement, particularly in individuals with [1]. Dyslexia is characterised by [2] that affect the representation, access, storage, and manipulation of speech[3]. These deficits are evident in tasks involving [4], rhyme detection, and [5], highlighting significant challenges in phonological representation and awareness. Such difficulties impede the establishment of solid [6] necessary for accurate grapheme-to-phoneme decoding.

Research consistently shows that individuals with dyslexia, irrespective of language and age, underperform in [7], rapid automatized naming, and phonological memory tasks. These challenges are linked to poor verbal [8] and working memory inefficiency, indicating persistent phonological impairments throughout life. Additionally, the deficits in phonological processing extend to speech [9] and production, further complicating literacy acquisition.

Early intervention programs targeting phonological skills have demonstrated effectiveness in mitigating these deficits in both children and adults. Accurate assessment of phonological abilities is vital for the early diagnosis of dyslexia, which can significantly influence [10]. Comprehensive screening of children at risk for dyslexia can facilitate timely interventions, promoting better literacy development and long-term academic success. This approach underscores the critical need for [11] and support to address the phonological challenges associated with dyslexia.

Activity 6. Read the text and complete the table.

	Statements	True	False	Not stated
1	Individuals with dyslexia experience difficulties in phoneme manipulation, rhyme detection, and spoonerisms.			
2	Dyslexia is characterised primarily by visual memory deficits rather than phonological impairments.			
3	Nonword repetition tasks primarily test a child's visual memory skills.			
4	Phonological deficits in individuals with dyslexia tend to diminish over time without intervention.			

	Statements	True	False	Not stated
5	Rhyme detection is a complex phonological awareness task that children with dyslexia perform well.			
6	The effectiveness of various interventions for improving phonological skills in individuals with dyslexia is different for different age groups.			

Activity 7. Choose the topics to talk about. Prepare your ideas, then work in pairs and share your perspectives.

1. The impact of phonological awareness on reading development in dyslexic children.
2. Effective early intervention strategies for phonological deficits in dyslexia.
3. Comparing phonological processing skills in typically developing children and children with dyslexia.
4. The role of short-term memory in phonological tasks for dyslexic children.
5. Longitudinal outcomes of phonological deficits in adults with dyslexia.

Activity 8. Translate each Russian term into its English equivalent. Provide an explanation of the equivalence, similar to the example.

Russian term	English term
ЯЗЫКОВАЯ СПОСОБНОСТЬ	language ability

Equivalence explanation: the term in both Russian and English refers to the capacity to use language for communication, including speaking, understanding, reading, and writing. It encompasses cognitive and motor skills necessary for language acquisition and use. Both terms are used in linguistics and related fields to describe overall language competence.

One-word terms:

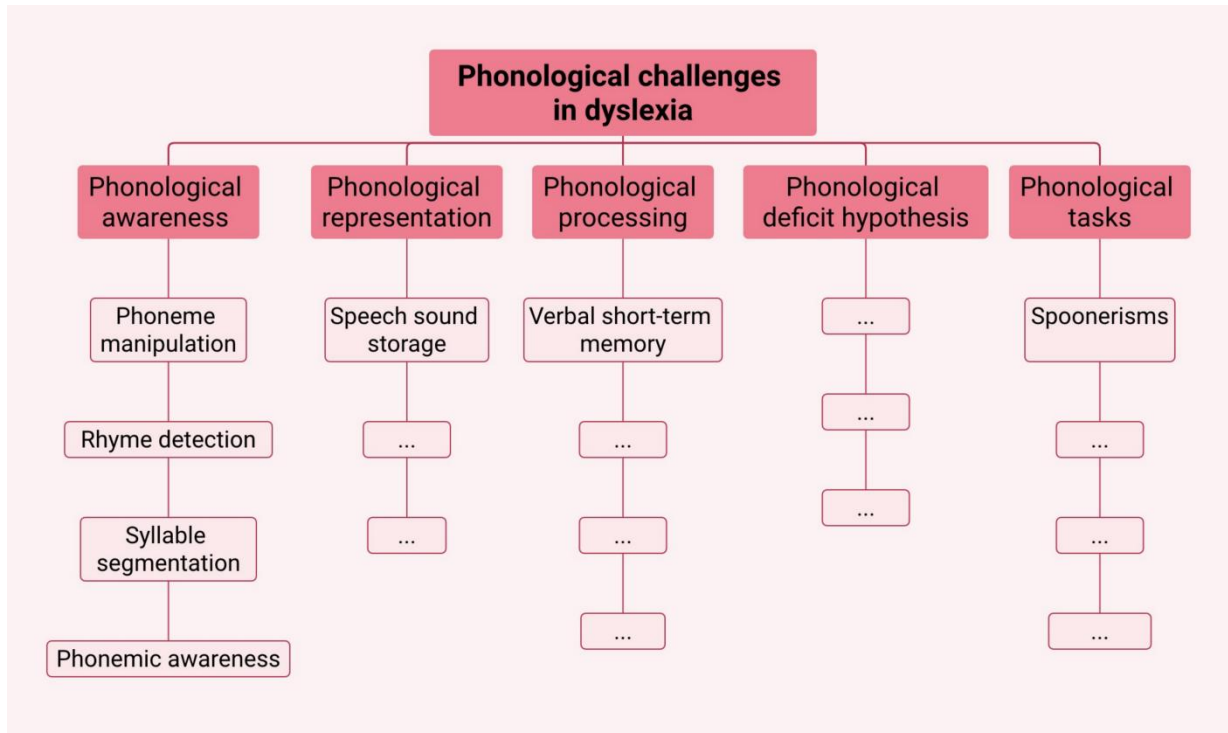
правописание, восприятие, представление, хранение, обработка, спунеризм, задание, предиктор, трудность, фонема, графема, декодирование, дошкольник, компенсировать, грамотность, свестники, псевдослово, неслово, стимул, супрасегментный, сегментный, сегментация.

Terminological units:

фонологическое восприятие, языковая способность, фонологические навыки, фонологические нарушения, нарушение способности к обучению (обучаемости), нарушение письменной речи (чтения и письма), Гипотеза фонологической недостаточности, кратковременна вербальная память, повторение неслов, прогон цифр, быстрое автоматическое называние, нарушение грамотности, основное проявление дислексии, неэффективность рабочей памяти, овладение навыками чтения, сохраняется во взрослом возрасте, моторная задача, контрольная группа, на протяжении всей жизни, фонологическая репрезентация, определение рифмы, повторение последовательности бессмысленных звуковых рядов, движение глаз, металингвистические способности, фонологическая компетенция, высокая когнитивная нагрузка.

Activity 9. Analyse the fragment of the mind map and answer the questions in pairs.

1. What are the key differences between phonological representation and phonological processing?
2. How do they affect literacy development in dyslexic individuals?
3. Which assessment tools can help in identifying phonological deficits in children with dyslexia?
4. What intervention strategies are most effective in addressing phonological deficits in children with dyslexia?
5. Why is early intervention critical?



Activity 10. Work in groups. Expand the mind map by adding elements related to phonological awareness, representation, and processing in dyslexia.

Activity 11. Present your mind maps to the class.

Activity 12. Discuss in pairs.

1. How can understanding phonological deficits in dyslexia enhance your effectiveness as a speech-language pathologist?
2. In what ways can the knowledge of phonological processing and awareness influence the development of IEPs for students with dyslexia in a school setting?

Activity 13. Reflect on your understanding of phonological challenges in dyslexia. How has this unit changed your perspective on the topic?

Unit 22. Language-Based Writing Difficulties

Activity 1. Discuss in pairs.

1. Have you ever found it challenging to write neatly or quickly? How did you manage these challenges?
2. What do you know about learning disabilities related to writing?

Activity 2. Classify the following terms into the correct category based on their relation to dysgraphia.

Premature birth, ADHD, academic assessment, brain injury, left parietal lobe, orthographic coding issues, family history of learning disabilities, confidence problems, occupational therapy, stroke, sensory processing difficulties, working memory deficits, trouble taking notes during meetings, fine motor skills problems, poor performance in written tests, handwriting training, self-esteem issues, anxiety, difficulty completing written tasks, negative feedback from employer

Risk factors	Neurological basis	Causes in children and adults	Implications for school and workplace

Activity 3. Watch the video “What Is Dysgraphia? Causes, Risks, Diagnoses.”⁴ What are the main challenges of dysgraphia for individuals in school and workplace settings?



⁴ URL: https://youtu.be/pdTD6vp6WkE?si=7ZS_ZHlutgm5vqj (Accessed 25.04.2024, 10:00h).

Activity 4. Work in pairs. Compare your ideas and discuss.

1. What are the key symptoms of dysgraphia as mentioned in the video?
2. How does dysgraphia impact a child's academic performance and emotional well-being?

Activity 5. Watch the video again and choose two letters A-E that the speaker mentions about the importance of early intervention for dysgraphia and the challenges faced by individuals with the disorder.

Early intervention for children with dysgraphia is crucial because...

- A. Intervention strategies become less effective as the child ages.
- B. It helps reduce the developmental impacts of the disorder, improving writing skills early on.
- C. C. Most children outgrow dysgraphia without any professional help.
- D. D. Timely support can significantly improve educational outcomes and self-esteem.
- E. E. Parents typically lack the necessary skills to address these disorders themselves.

Children and adults with dysgraphia often experience heightened frustration when attempting to write because...

- A. Their cognitive abilities to form thoughts are impaired.
- B. They can mentally formulate their messages but face barriers to written expression.
- C. Social interactions tend to overwhelm them easily.
- D. This barrier can lead to emotional distress and lower confidence in academic settings.
- E. Their understanding of language is too limited to engage in written communication.

Identify which of the following are common symptoms of dysgraphia:

- A. Illegible handwriting
- B. Difficulty reading comprehension
- C. Correct spelling and capitalisation

- D. Slow or laboured writing
- E. Inappropriate sizing and spacing of letters
- F. Mixing cursive and print letters

Activity 6. Complete the table, using one word in each gap.

Aspect	Description	Impact on child	Intervention focus
Handwriting skills	Difficulty in producing legible and (1) _____ handwriting.	Struggles with (2) _____ notes in class.	Improve handwriting techniques.
Sizing and capitalisation	Consistent errors in spelling and improper use of (3) _____ letters.	Leads to (4) _____ grades in written assignments.	Enhance spelling and (4) _____ skills.
Writing fluency	Slow and (5) _____ writing process.	Causes (6) _____ in completing written tasks.	Increase writing speed and (7) _____.
Visual-motor integration	Difficulty visualising and reproducing written words.	Struggles with (8) _____ words correctly.	Improve (9) _____ coordination and visualisation skills.
Emotional impact	Low (10) _____ and anxiety related to writing tasks.	Affects (11) _____ towards school and learning.	Provide emotional and (12) _____ support.

Activity 7. Work in pairs. Discuss the questions.

1. What are some potential causes of dysgraphia in children and adults?
2. Why is early intervention important for children with dysgraphia?

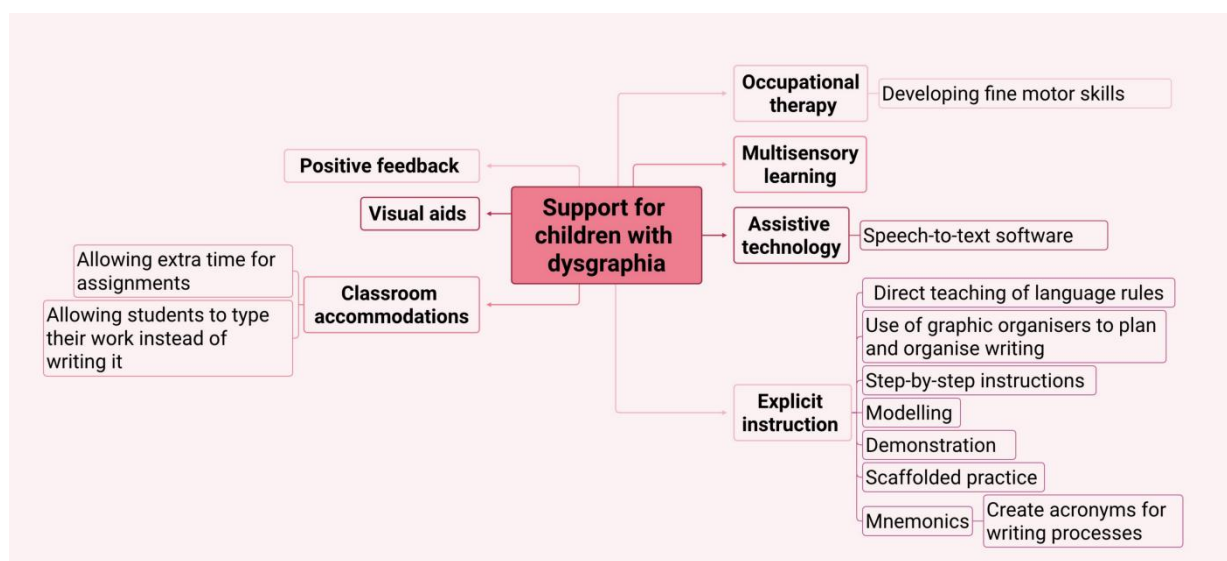
3. What strategies can be used to support them?
4. How can educators and parents work together to help a child with dysgraphia succeed in school?

Activity 8. Classify aspects of dysgraphia based on how they manifest.

Difficulty distinguishing between similar shapes, issues with holding a pencil correctly, difficulty starting the writing process, difficulty organising the thoughts coherently, problems with spacing letters and words on the page, handwriting fatigue, problems with retrieving the right words to express thoughts, problems with editing written work, challenges in organising writing in straight lines, poor letter formation, challenges in applying language rules during writing, inability to understand one's own written text.

Visual-spatial processing	Fine-motor skills	Language processing	Information processing

Activity 9. Choose one aspect related to supporting children with dysgraphia and research it in depth. Expand the mind map given below.



Activity 10. Present your findings to the class. Include definitions, examples, and real-world applications of the chosen support strategy.

Activity 11. Discuss in groups.

1. Which professionals are typically involved in supporting children with dysgraphia?
2. What specific roles do they play in intervention?
3. What multisensory techniques can be used to support children with dysgraphia?
4. How can assistive technology be used to support dysgraphia students in the classroom?
5. What classroom accommodations can be implemented to support students with dysgraphia?

Activity 12. Reflect on the importance of classroom accommodations for enhancing the confidence and participation of students with dysgraphia.

Unit 23. Language and Mathematical Abilities

Activity 1. Discuss in pairs.

1. How are linguistic skills similar to mathematical skills?
2. What are the key indicators and symptoms of dyscalculia?

Activity 2. Match the following terms with their definitions.

Dyscalculia, language difficulties, working memory, executive functions, phonological awareness, rapid automatised naming (RAN), verbal comprehension, symbolic representation, cognitive deficits, intervention

1		The ability to understand spoken language.
2		One of the brain's executive functions. It's a skill that allows us to work with information without losing track of what we're doing.
3		The process of mentally representing objects and experiences through the use of symbols (including linguistic symbols).
4		An inclusive term used to describe the impairment of different domains of cognition.
5		An impaired ability to perform simple arithmetic operations that results from a congenital deficit. It is a developmental condition.
6		A set of cognitive processes that are essential for the cognitive control of behaviour.
7		It can affect adults and children. It can include articulation, rhythm and voice disorders that can affect both the composition of wording (choice of words and their meanings) and the expression (vocal disorders).
8		The ability to recognise and distinguish between the sounds used in spoken language, including syllables,

		rhymes, and phonemes.
9		The ability to quickly name aloud a series of familiar items.

Compiled from: URL: <https://www.understood.org/> (Accessed 26.04.2024, 09.00h), URL: <https://dictionary.apa.org/> (Accessed 26.04.2024, 09.15h)

Activity 3. Read the article introduction. What are the current research findings on how to diagnose and support individuals with dyscalculia?

Dyscalculia and Other Learning Disorders: A Review of Literature of Current Findings and Remedies

The condition known as dyscalculia originates from the Greek term *dys* and the Latin term *calculia*. There are many alternative terms used to refer to learning obstacles related to mathematics. For instance, Ladislav Kosc, a psychologist from Czechoslovakia, introduced the term *Developmental Dyscalculia* in 1974. Other scholars such as Koontz and Berch have introduced the term *Arithmetic Learning Disabilities*, Hich prefers *Specific Arithmetic Difficulties*, and Temple and Sherwood use the term *Number Fact Disorder*.

According to the Department of Education and Skills (DfES) (2001), “Developmental dyscalculia is a condition that affects the ability to acquire arithmetical skills. Dyscalculic learners may have difficulty understanding simple number concepts, lack an intuitive grasp of numbers, and have problems learning number facts and procedures. Even if they produce a correct answer or use a correct method, they may do so mechanically and without confidence.”

Compared to how dyslexia is currently accepted and understood, the field of dyscalculia is still in its infancy. To examine essential areas and abilities in mathematics and provide suggestions on how to enhance the student’s knowledge and skills based on the findings, a qualitative evaluation could be valuable.

Dyscalculia affects about 5% of school children. Sue Gifford reported in her review of the research, “Young Children’s Difficulties in Learning

Mathematics,” which ranged between 3% to 6%. Shalev et al. (2000) concluded that a realistic estimate was 5%, as with dyslexia. There is no cure for dyscalculia because it is not a disease. If taught appropriately, many dyscalculics can develop into competent mathematicians. Emerson House created a multi-sensory teaching approach that is effective for this.

Ladislav Kosc (1970) identified three types of dyscalculia: primary, secondary, and tertiary. Primary dyscalculia involves difficulty acquiring basic arithmetic skills like counting. Secondary dyscalculia relates to understanding mathematical concepts and applying them in problem-solving. Tertiary dyscalculia occurs when previously acquired mathematical skills are lost due to brain damage or injury.

Strang and Rourke (1985) added two more types: visual-spatial dyscalculia and auditory-verbal dyscalculia.

Reynolds and Janzen (1997) proposed: quantitative dyscalculia (difficulty with basic calculations, estimating, and understanding numerical relationships), procedural dyscalculia (challenges in applying mathematical operations and algorithms), retrieval dyscalculia (trouble retrieving basic arithmetic knowledge from memory).

Ardila and Rosselli (2002) identified: verbal dyscalculia (difficulty with vocal aspects of maths, like counting aloud and understanding mathematical terminology), practognostic dyscalculia (problems with performing mathematical operations and using tools like calculators) and visuospatial dyscalculia (difficulty understanding visual-spatial aspects of maths, such as graphs and geometric shapes).

The NCF 2005 recommends using concrete materials, such as manipulatives and real-life examples, to help learners understand mathematical concepts. It emphasises building a strong foundation in basic mathematical abilities before progressing to more complex concepts.

Orly and Avishai (2006) reported that individuals with developmental dyscalculia have difficulty automatically associating numbers with their magnitudes, while this issue is not observed with associating letters and phonemes. Research is necessary to understand all types of dyscalculia and its impact on learners' mathematical abilities.

Robinson (2003) studied 318 third-grade children with learning disabilities across six public schools. The study divided them into groups:

those with maths disabilities, those with both maths and reading disabilities, and a control group. It found that children struggling with number sense and phonological processing had more difficulty learning. However, those with only math issues compensated by using their phonological processing abilities. Unaddressed, these issues could persist into later learning stages.

Maite and Mete (2006) investigated learning difficulties with fractions among Indian secondary school children. They found that one-third of errors in dividing fractions were due to failing to invert the divisor before multiplication, and one-fourth were due to a lack of understanding of the process.

Vukovic and Siegel (2010) examined students with Mathematics Difficulty (MD-p) from grades I to IV. The study found that these students were more likely to struggle with calculation, real-world problem-solving, number facts, and reading, primarily due to deficiencies in maths concepts and phonological decoding, with working memory and processing speed also playing roles.

Monei and Pedro (2017) found that structured, systematic, and individualised interventions, including explicit instruction and multisensory learning, were most effective in improving maths skills for children with dyscalculia, particularly when targeting specific skills like number sense and basic operations.

Sousa, Dias, and Cadime (2017) assessed primary school teachers' understanding of developmental dyscalculia (DD) in Portugal. The study revealed generally poor knowledge, with an average correct response rate of 34%. Teachers with personal experience with DD had higher knowledge levels.

Morsanyi et al. (2018) compared children with developmental dyscalculia to those without arithmetic issues, finding significant deficits in processing numerical and non-numerical orders among those with dyscalculia. These deficits were linked to poorer mathematical abilities, suggesting targeted interventions could improve these skills.

At the college level, fewer studies exist. Evans and Ellen (2003) found that university students with learning disabilities were generally content with the accommodations provided in maths courses. Wilson et al. (2015) reported that dyscalculia and dyslexia share deficits in visual

attention, phonological processing, and working memory, with unique deficits in each condition.

Research also links dyscalculia with other learning and psychological issues. Hannell (2005) found a significant overlap between dyslexia and dyscalculia, while Michaelson (2007) reported that many children with dyscalculia also exhibit symptoms of ADHD. Cheng et al. (2018) found similar visual perception deficits in children with dyslexia and dyscalculia, impacting their academic performance. Witzel and Mize (2018) emphasised the benefits of a multisensory approach to learning for these students.

Monuteaux et al. (2005) suggested that ADHD and dyscalculia have different familial transmission patterns. Kucian et al. (2013) proposed that dyscalculia results from dysfunctions in neural connections between brain regions involved in numerical processing, advocating for targeted numerical activities to improve these connections.

Dyscalculia is a learning impairment that requires additional support outside of traditional classroom instruction. Educators, doctors, and therapists all participate in the particular support. Dyscalculics need assistance to learn properly through early identification and specialised teaching methods. Plans for these children's rehabilitation must consider their level and type of dysfunction. Research in this area is desperately needed because maths proficiency is essential for learners to succeed academically. Dyscalculia is a developmental issue that requires assistance outside of the scope of what is covered in school. The duties of therapists, medical professionals, and special educators are all a part of the special support.

Due to the disorder's numerous symptoms and possible causes, diagnosing developmental dyscalculia is a challenging process. In the past twenty years, there have been efforts to create instruments for computerised screening for dyscalculia. Additional research is necessary to refine and standardise these tools to enable widespread use.

Compiled from: Safi A. (2023). Dyscalculia and other learning disorders: A review of literature of current findings and remedies. International Journal of Current Science (IJCSPUB). 2023. № 13 (2). Pp. 673-678.

Activity 4. Discuss in pairs.

1. What major types of dyscalculia are identified in the literature? How do they differ in their characteristics and underlying cognitive deficits?
2. What implications do the key findings from Robinson’s (2003) study on number facts performance among third-grade children with learning disabilities have for educational interventions?
3. How do the studies by Monei and Pedro (2017) and Vukovic and Siegel (2010) contribute to our understanding of effective interventions for dyscalculia?
4. According to Sousa, Dias, and Cadime (2017), what factors influence primary school teachers’ understanding of developmental dyscalculia?
5. How do the cognitive deficits unique to dyscalculia and dyslexia identified by Wilson et al. (2015) help distinguish between the two disorders?

Activity 5. Create an outline of the article, identifying the key sections and subsections.

Activity 6. Work in pairs. Complete the literature article review analysis table. Consider the following components of the literature review:

gathering information, theoretical framework, review of literature, research findings, methodology of research, themes, debates, research gaps, critical analysis, references.

Section	Themes, arguments, key points presented	Questions to consider	Evidence from the article
Introduction			
Body			
Conclusion			

Activity 7. Examine the following phrases from the article and explain their meanings and implications.

1. The condition known as dyscalculia originates from the Greek term 'dys' and the Latin term 'calculia'.

2. Ladislav Kosc, a psychologist from Czechoslovakia, introduced the term 'Developmental Dyscalculia' in 1974.

3. Developmental dyscalculia is a condition that affects the ability to acquire arithmetical skills. Dyscalculic learners may have difficulty understanding simple number concepts, lack an intuitive grasp of numbers, and have problems learning number facts and procedures.

4. Dyscalculia affects about 5 percent of school children.

5. Ladislav Kosc (1970) identified three types of dyscalculia: primary, secondary, and tertiary.

6. Strang and Rourke (1985) added two more types: visual-spatial dyscalculia and auditory-verbal dyscalculia.

7. Emerson House created a multi-sensory teaching approach that is effective for this. The NCF 2005 recommends using concrete materials, such as manipulatives and real-life examples, to help learners understand mathematical concepts.

8. Robinson (2003) studied 318 third-grade children with learning disabilities across six public schools. The study found that children struggling with number sense and phonological processing had more difficulty learning.

9. Monei and Pedro (2017) found that structured, systematic, and individualised interventions, including explicit instruction and multisensory learning, were most effective in improving maths skills for children with dyscalculia.

10. Sousa, Dias, and Cadime (2017) assessed primary school teachers' understanding of developmental dyscalculia (DD) in Portugal. The study revealed generally poor knowledge, with an average correct response rate of 34%.

11. Research also links dyscalculia with other learning and psychological issues. Hannell (2005) found a significant overlap between dyslexia and dyscalculia, while Michaelson (2007) reported that many children with dyscalculia also exhibit symptoms of ADHD.

12. Research in this area is desperately needed because maths proficiency is essential for learners to succeed academically. Dyscalculia is a developmental issue that requires assistance outside of the scope of what is covered in school.

Activity 8. Discuss in groups. Analyse genre-specific language features of a literature review.

1. How does the article balance the use of formal, objective academic language with clinical terminology and patient-centred language?
2. What types of evidence and sources are cited in the article?
3. In what ways does the article critically analyse the research findings?
4. How are research gaps in the literature presented in the article?
5. How are the methodologies evaluated for their relevance and effectiveness in investigating dyscalculia?

Activity 9. Using the Corpus of Contemporary American English (COCA), explore the frequency, collocations and contextual usage of the following phrases from the article. Complete the table with your findings.

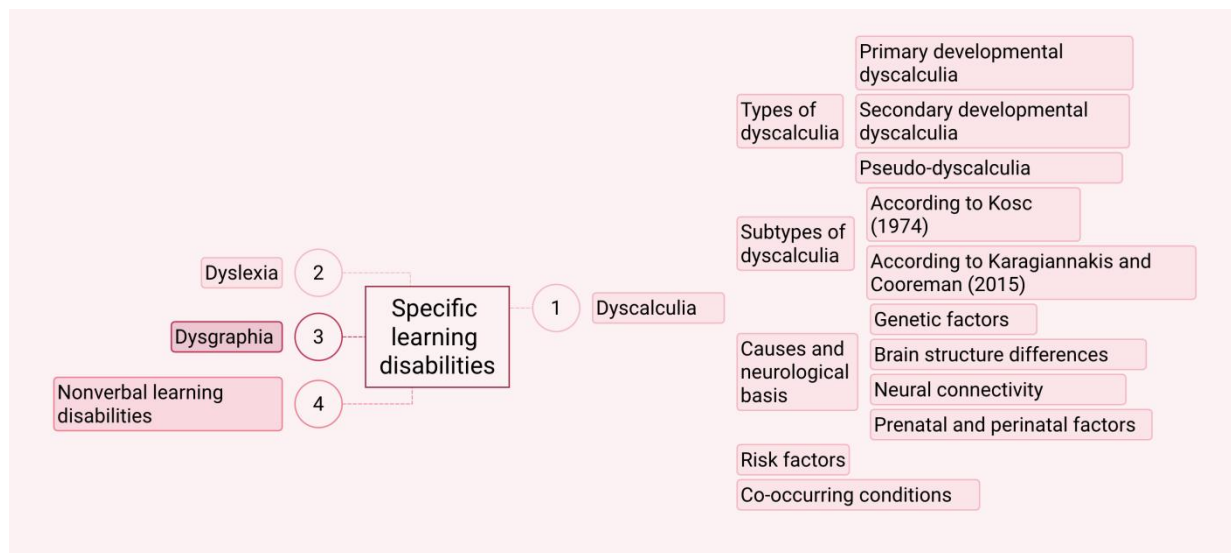
Phrase	Frequency	Context	Co-occurring terms
Developmental dyscalculia			
Arithmetic learning disabilities			
Multisensory teaching approach			
Number sense			
Phonological processing			
Mathematical concepts			
Visual-spatial skills			

Language processing difficulties			
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Activity 10. Work in groups. Brainstorm terms related to *dyscalculia in children*. Discuss how terms relate to each other. Use arrows or lines to show connections:

e.g., developmental dyscalculia -> directly impacts -> number sense

Activity 11. Work in groups. Choose two types of dyscalculia and expand the mind map below.



Activity 12. Think about a specific aspect of language difficulties in the context of specific learning disabilities that interests you. Design a hypothetical research topic and research the existing corpus of literature dedicated to this topic. Create a list of sources.

Activity 13. Write a literature review on your chosen research topic.

Your review should include:

1. Introduction
2. Body: summary and critical evaluation of each source with a focus on the research design and conclusion
3. Conclusion

Activity 14. Review each other's literature reviews. Use the following template to provide your feedback.

Information accuracy and relevance	
Clarity and organisation	
Linguistic accuracy	
Overall impression	

Unit 24. Multidisciplinary Support for Students with Nonverbal Learning Disabilities

Activity 1. Discuss in pairs.

1. What is a nonverbal learning disability and how does it manifest?
2. Which specialists can help support students with NVLD. What roles do they play in providing effective assistance?

Activity 2. Categorise various impaired skills and symptoms associated with nonverbal learning disabilities.

Inconsistent academic performance, difficulty making friends, anxiety in social situations, increased frustration with schoolwork, misinterpreting others' intentions, low self-esteem, poor hand-eye coordination, difficulty initiating conversations, physical clumsiness, awkward movements, frequent tripping, difficulty comprehending the arrangement and orientation of objects in space, misplacing items frequently, difficulty following multi-step instructions, overreaction to loud noises or bright lights, frequent spelling and grammar mistakes.

Visual-spatial skills	
Motor skills	
Executive functioning	
Mathematical skills	
Social skills	
Sensory processing	
Written expression	
Organisational skills	

Activity 3. Read the text. Why is advocacy and equitable support essential for students with nonverbal learning disabilities, and what are the main barriers they face?

The State of Learning Disabilities Today

Advocacy plays a crucial role in bringing attention to learning disabilities and ensuring that individuals affected by these conditions receive the support they need. In the United States, significant health and educational issues only gain attention when parents, patients, and victims express their concerns. Here are key reasons why strong advocacy and legal safeguards are essential for individuals with learning disabilities:

1. American educational policies aim to accommodate individual differences. However, classrooms often consist of diverse groups, and most curricula target common factors rather than individual needs.

2. Schools are responsible for providing equal opportunities but not necessarily equal conditions, leading to disparities in educational experiences.

3. The reliance on local property taxes for school funding creates significant disparities in per-pupil expenditures between districts.

4. Education reform movements in the U.S. have historically neglected the public responsibility to educate all students.

5. Social, medical, and educational services for children have never been a national priority in the U.S., unlike in many other industrialised nations.

Research indicates that 1 in 5 individuals in the U.S. have learning and attention issues. This translates to approximately 65.6 million people based on the 2019 population data. Among the 56.6 million students in elementary and secondary schools, 20%, or 11.2 million students, face these challenges.

Despite the high prevalence, only about 8.25% of these students receive specialised instruction or accommodations through an Individualised Education Program (IEP) or a 504 plan. This leaves a significant portion - approximately 6.65 million students - without formal identification or support. Unaddressed learning and attention issues contribute to higher dropout rates and lower college enrollment and completion rates. Furthermore, these issues are linked to the school-to-prison pipeline, with many affected individuals having interactions with the justice system.

The Learning Disabilities Association (LDA) emphasises the importance of advocacy to create opportunities for success. The LDA works

to: empower parents, equip teachers, early intervention, and build self-advocacy skills.

Equity in education is achieved when all students receive the resources they need to succeed after high school. The LDA's mission is to ensure that individuals with learning disabilities can participate fully and prosper in society by advocating for an equitable distribution of resources and support.

Advocacy remains a crucial element in addressing the needs of individuals with learning disabilities. By understanding the barriers they face and the importance of a multidisciplinary approach, we can work towards a more inclusive and supportive educational environment.

Compiled from: Learning Disabilities Association of America. The state of learning disabilities today. LDA Today. URL: https://ldaamerica.org/lda_today/the-state-of-learning-disabilities-today/ (Accessed 27.04.2024, 12.05h).

Activity 4. Discuss in groups.

1. What are the primary reasons cited in the text for the need for strong advocacy and legal safeguards for individuals with learning disabilities?
2. How do funding inequities and educational policy differences contribute to the disparities in support for students with learning disabilities?
3. Based on the statistics provided, what are the key challenges faced by the '1 in 5' individuals with learning and attention issues in the USA?
4. Which professionals should be involved in supporting students with learning disabilities?

Activity 5. Collaborative project. Prepare for the team talk at the CLD 46th International Conference on Learning Disabilities.

You are preparing to attend the CLD 46th International Conference on Learning Disabilities. You will be presenting on key topics related to specific learning disorders. Collaboratively create an informative presentation, highlighting trends, challenges, support strategies, and the role of multidisciplinary teams in addressing specific learning disorders.



CLD 46th International Conference on Learning Disabilities

Please join us in Charlotte, North Carolina for our 46th International Conference on Learning Disabilities!

Source: URL: <https://council-for-learning-disabilities.org/cld-event/cld-46th-international-conference-on-learning-disabilities/> (Accessed 26.04.2024, 12:05h)

Conference program topics

Section	Topics covered	Speakers
Session 1: Trends in specific learning disorders	Current statistics, emerging research, and evolving understanding of dyslexia, dyscalculia, dysgraphia, and NVLD.	Team 1
Section 2: Challenges faced by individuals with SLD	Academic, social, emotional, and professional challenges experienced by individuals with SLD.	Team 2
Section 3: Strategies of support for SLD	Effective teaching strategies, accommodations, interventions, and use of technology in supporting individuals with SLD.	Team 3

Section	Topics covered	Speakers
Section 4: Role of multidisciplinary teams in supporting children with SLD	Importance of collaboration among educators, psychologists, speech-language pathologists, occupational therapists, and parents.	Team 4

Guidelines:

1. In teams choose a section and a topic for your talk.
2. Research the chosen topic.
3. Develop key points and organise them into a presentation.

Activity 6. Give 10-minute team talks in a mock conference setup. Engage with the audience during the Q&A sessions.

Activity 7. Arrange the following phrases according to their function. Add more examples to the table.

1. I'll focus on exercises that improve Edward's hand-eye coordination and fine motor skills.
2. Let's begin by reviewing the specific challenges he is facing.
3. Incorporating sensory integration techniques will help address any sensory processing issues he might have.
4. Edward has significant difficulty understanding spatial relationships and often gets confused with tasks that involve multiple steps.
5. His visual-spatial challenges are coupled with fine motor skill issues, which particularly impact his handwriting abilities.
6. Additionally, Edward faces challenges with expressive language and it makes it hard for him to communicate effectively with both peers and teachers.
7. To support Edward better, we should consider modifying the curriculum to include more visual aids and structured routines.
8. Thank you for your collaboration today.
9. We'll use regular assessments to monitor his progress and make necessary adjustments to our strategies.
10. I will offer regular counselling sessions to help Edward manage his anxiety and develop his social skills.

11. I'll work on enhancing Edward's expressive language skills through dedicated speech therapy sessions.

12. Using social stories and role-playing exercises will assist Edward in understanding social cues and improving his interactions.

Functions	Phrases
Opening the meeting	
Identifying specific challenges	
Proposing interventions	
Counselling and emotional support	
Closing the meeting	

Activity 8. Prepare for the role-play according to the guidelines in your role-play card.

Scenario

You are going to take part in a collaborative meeting to discuss the challenges faced by Edward, a student with nonverbal learning disabilities, and to create a comprehensive treatment plan that includes academic support, social skills training, sensory integration, and speech therapy.

Role card 1	Role card 2	Role card 3	Role card 4
<p>Role: SEN teacher</p> <p>Goal: Provide observations of Edward's learning difficulties. Suggest developing an IEP.</p>	<p>Role: classroom teacher</p> <p>Goal: speak about Edward's difficulties in the classroom. Seek practical advice and collaboration with experts.</p>	<p>Role: occupational therapist</p> <p>Goal: speak about improving Edward's hand-eye coordination and fine motor skills. Emphasise the need for implementing</p>	<p>Role: speech-language pathologist</p> <p>Goal: address Edward's expressive language difficulties. Suggest specific strategies for improving his</p>

		sensory integration techniques.	communication skills.
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Activity 9. Role-play the collaborative meeting of a multidisciplinary team providing support to a student with NVLD. Use the phrases.

Activity 10. Discuss in groups. Share your observations and insights from the role-play activity on planning interventions for a child with NVLD.

Activity 11. Reflect on specific strategies that you think will be most effective in addressing Edward's academic, social, and emotional needs.

REFERENCES

1. Gargot T., Asselborn T., Pellerin H., Zammouri I. et al. Acquisition of handwriting in children with and without dysgraphia: A computational approach. *PLoS One*. 2020. № 15 (9). P. 22.
2. Knoop-van Campen C.A.N., Segers E., Verhoeven L. How phonological awareness mediates the relation between working memory and word reading efficiency in children with dyslexia. *Dyslexia*. 2018. № 24 (2). Pp. 156–169.
3. Mammarella I.C., Cornoldi C. An analysis of the criteria used to diagnose children with Nonverbal Learning Disability (NLD). *Child Neuropsychol*. 2014. № 20 (3). Pp. 255–280.
4. Muter V. Phonological Skills, Learning to Read, and Dyslexia. In M. Turner & J. Rack (Eds.), *The study of dyslexia*. 2004. Pp. 91–129.
5. Peters L., Op de Beeck H., De Smedt B. Cognitive correlates of dyslexia, dyscalculia and comorbid dyslexia/dyscalculia: Effects of numerical magnitude processing and phonological processing. *Res Dev Disabil*. 2020. P. 107.
6. Rapp B., Purcell J., Hillis A.E., Capasso R. et al. Neural bases of orthographic long-term memory and working memory in dysgraphia. *Brain*. 2016. № 139 (2). Pp. 588–604.
7. Safi A. Dyscalculia and other learning disorders: A review of literature of current findings and remedies. *International Journal of Current Science*. 2023. № 13 (2). Pp. 673–678.
8. Snowling M.J., Moll K., & Hulme C. Language difficulties are a shared risk factor for both reading disorder and mathematics disorder. *Journal of Experimental Child Psychology*. 2021. № 202. P. 12.
9. Greisen M., Georges C., Hornung C., Sonnleitner P. et al. Learning mathematics with shackles: How lower reading comprehension in the language of mathematics instruction accounts for lower mathematics achievement in speakers of different home languages. *Acta Psychologica*. 202. № 221. P. 11.
10. Vanbinst K, De Smedt B. Individual differences in children's mathematics achievement: The roles of symbolic numerical magnitude

processing and domain-general cognitive functions. *Prog Brain Res.* 2016. № 227. Pp. 105–130.

11. Vender M. & Melloni C. Phonological Awareness across Child Populations: How Bilingualism and Dyslexia Interact. *Languages.* 2021. № 6 (39). P. 20.

12. Volden J. Nonverbal learning disability. *Handb Clin Neurol.* 2013. № 111. Pp. 245–249.

13. Бурдукова Ю.А., Алексеева О.С., Чижова В.А., Щеглова А.В. Связь вербальной памяти и пространственной рабочей памяти с интеллектом у детей 10–11 лет [Электронный ресурс] // Психолого-педагогические исследования. 2017. Том 9. № 4. С. 43–50.

14. Корнев А.Н., Авраменко А.С. Индивидуальная вариативность когнитивных механизмов овладения чтением: корреляционный анализ // Проблемы Онтолингвистики – 2012. Мат. Междунар. науч. конф., 24–26 апреля 2012. СПб. 2012. С. 430–437.

Online sources

1. American Psychological Association. Symbolic representation. In APA Dictionary of Psychology. URL: <https://dictionary.apa.org/symbolic-representation> (Accessed 25.04.2024, 12:00h).

2. DyslexiaHelp. 14 dyslexia tests clinicians like. University of Michigan. URL: <https://dyslexiahelp.umich.edu/professionals/learn-about-dyslexia/diagnosing-dyslexia/tests/14-dyslexia-tests-clinicians-like> (Accessed 26.04.2024, 12:15h).

3. Humanitas Research Hospital. Language difficulty: Expressive language disorder. In Humanitas Health. URL: <https://www.humanitas.net/wiki/anatomy/language-difficulty-expressive-language-disorder/> (Accessed 26.04.2024, 13:00h).

4. NeuroHealth. Types of Dyslexia. URL: <https://neurohealthah.com/blog/types-of-dyslexia> (Accessed 26.04.2024, 14:05h).

5. Phonological and Phonemic Awareness. Reading Rockets. URL: www.readingrockets.org/reading-101/reading-101-learning-modules/course-modules/phonological-and-phonemic-awareness (Accessed 26.04.2024, 14:23h).
6. Simply Thrive. Types of dyscalculia. URL: <https://simplythrive.co.uk/adult-dyscalculia/types-of-dyscalculia/> (Accessed 26.04.2024, 13:15h).
7. Understood Team. Rapid automatised naming tests: What you need to know. Understood. URL: <https://www.understood.org/en/articles/rapid-automatized-naming-tests-what-you-need-to-know> (Accessed 26.04.2024, 12:56h).
8. Understood.org. The difference between dyslexia and dyscalculia. URL: <https://www.understood.org/en/articles/the-difference-between-dyslexia-and-dyscalculia> (accessed 26.04.2024, 14:56h).
9. Understood. Understanding nonverbal learning disabilities. URL: <https://www.understood.org/en/articles/understanding-nonverbal-learning-disabilities> (Accessed 26.04.2024, 15:56h).
10. University of California, San Diego. *Writing a literature review*. URL: <https://psychology.ucsd.edu/undergraduate-program/undergraduate-resources/academic-writing-resources/writing-research-papers/writing-lit-review.html> (Accessed 25.04.2024, 16:00h).

MODULE 7

ACQUIRED COMMUNICATION DISORDERS

In this module, you will practise:

Skills focus

Reading	Aphasia: Types and Characteristics
Listening	Parkinson's and Your Voice
Writing	An annotated bibliography evaluating research related to communication support for individuals with ALS
Speaking	<p>Collaborative project: A patient progress report for a post-TBI patient</p> <p>Role-play: A rehabilitation planning session with a post-TBI patient</p>

Language focus

Professional terminology	<p>Aphasia, stroke, TBI (traumatic brain injury), dysphasia, alexia, agraphia, mutism, dysarthria, apraxia, agnosia, paralysis, blindness, PPA (primary progressive aphasia), trauma, frontotemporal dementia, auditory verbal agnosia, concussion, migraine, seizures, infection, fluent speech, short phrases, speech comprehension, speech repetition, laborious speech production, almost nonsensical speech, vision problems, paraphasic speech, writing impairment, neurodegenerative brain diseases, anomia, aphasia, global aphasia, Alzheimer's disease, irreversible damage, etc.</p>
Functional language for academic and professional writing	<p>This article discusses the benefits and challenges of using high-tech AAC devices in palliative care for ALS patients. It emphasises the importance of maintaining patient autonomy and reducing caregiver burden through effective communication support. The source is credible, published in a peer-reviewed journal, and authored by experts in the field, etc.</p>
Functional language for academic and professional speaking	<p>Hello, Kevin! Today we are here to talk about your rehabilitation plan. Our primary goal is to help you recover your abilities and resume your regular activities. Therapy sessions will include exercises to enhance your motor skills, etc.</p>

Unit 25. Aphasia: Types and Characteristics

Activity 1. Work in pairs. Discuss the questions.

1. How does aphasia impact a person's ability to communicate?
2. What are the main differences between receptive and expressive aphasia?
3. How can speech-language pathologists support individuals with aphasia in their daily communication and social interactions?

Activity 2. Match each condition to classification criteria. Complete the table.

Classification criteria:

effortful, halting speech; difficulty in understanding language; difficulty swallowing; abnormal rhythm and pitch in speech; slurred or slow speech; sensation of food being stuck in the throat; partial loss of language comprehension; difficulty in producing language; groping for the right sound or word; coughing or choking when eating or drinking; fluent but nonsensical speech; difficulty controlling speech muscles; difficulty planning and coordinating the movements needed for speech; partial loss of language production; inconsistent speech errors.

Aphasia	Dysphasia	Dysphagia	Apraxia	Dysarthria

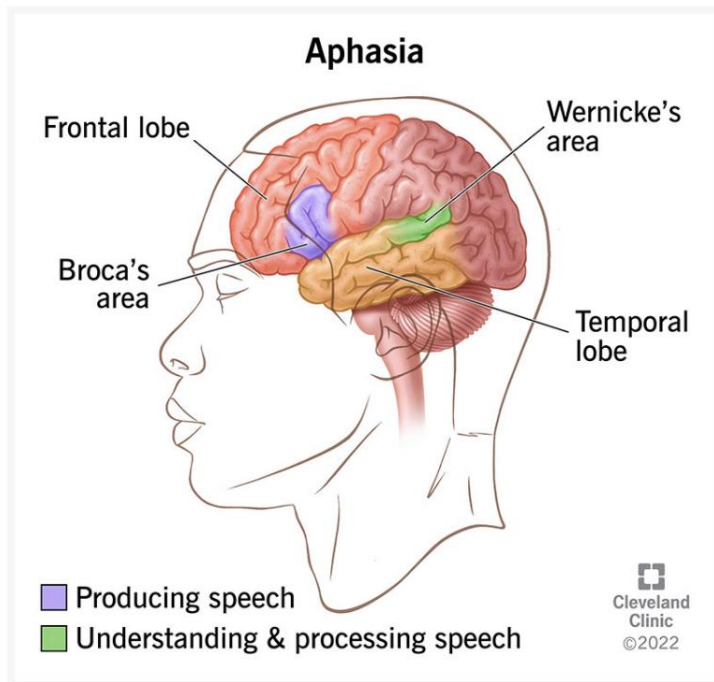
Activity 3. Analyse concordance lines in the Corpus of Contemporary American English and identify the most common collocations and the contexts of use for the terms *Broca's aphasia*, *Wernicke's aphasia* and *Global aphasia*. Complete the table with your findings.

Term	Collocations	Context of use
Broca's aphasia		
Wernicke's aphasia		
Global aphasia		

Activity 4. Read the text. How do different types of aphasia differ in symptoms and severity?

Aphasia: From Symptoms to Treatment and Support

Aphasia is a disorder where you have problems speaking or understanding what other people say. It usually happens because of damage to part of your brain but can also happen with conditions that disrupt how



your brain works. There are also multiple types of aphasia. The location of the damage in your brain determines the type of aphasia you have.

This condition is almost always a symptom of another problem, such as a stroke or traumatic brain injury. It can also happen as a temporary effect of conditions like migraines. Aphasia is often treatable.

Source:

URL:

<https://my.clevelandclinic.org/>

Aphasia is a condition that overlaps with several other speech-related disorders, including dysarthria, dysphasia, and apraxia. Aphasia is a broad term referring to brain-related problems with language abilities, encompassing difficulties in speaking or understanding speech. It is used to describe both complete and partial loss of language abilities.

Aphasia can affect anyone who has damage to the areas of the brain that control your ability to speak or understand other people speaking. It's more common in middle-aged and older adults - especially because of conditions like stroke - but it can also happen at any age.

Aphasia is uncommon, with about 2 million people in the United States having this condition and about 180,000 more developing it each year. It does happen very commonly with certain conditions. An example of this is

stroke, where nearly one-third of people with that condition also have some form of aphasia.

Because this affects the ability to communicate, people with this condition often feel it's hard for others to understand them. This can cause a range of problems. Some are just minor annoyances, like not being able to ask for a glass of water. Others could become life-threatening misunderstandings, like not being able to tell someone that you're having symptoms of a stroke.

There are multiple types of aphasia and aphasia-like conditions. While the symptoms of aphasia have many similarities, there are still some important differences. To understand how aphasia works, it helps to understand a little bit about two specific parts of the brain that work together when you talk:

Broca's area: this part of the brain gets its name from the French physician who discovered it controls the muscles you use to speak. It's part of your frontal lobe, usually on the left side just forward of your temple.

Wernicke's area: This part of the brain gets its name from the German neurologist who discovered that it controls your ability to understand and choose the right words to use when you talk. It's part of your temporal lobe, also usually on your left side just above your ear.

These two areas of the brain work together to help you speak. Wernicke's area processes your understanding of words and picks which ones you use, and then it sends signals to Broca's area. Once Broca's area knows what words to use, it sends the signals to the muscles you use when you speak.

Aphasia types and features			
Condition	Problems with		
	Fluency	Understanding	Repetition
Global aphasia	-	-	-
Mixed transcortical aphasia	-	V	V
Broca's aphasia*	-	V	-
Transcortical motor aphasia	-	V	V

Aphasia types and features			
Condition	Problems with		
	Fluency	Understanding	Repetition
Wernicke's aphasia*	V	-	-
Transcortical sensory aphasia	V	-	V
Conduction aphasia	V	V	-
Anomic aphasia	V	V	V
* Most common conditions			

Source: URL: [https:// my.clevelandclinic.org/health/diseases/5502-aphasia](https://my.clevelandclinic.org/health/diseases/5502-aphasia)

Broca's Aphasia

Also known as *non-fluent aphasia* or *expressive aphasia*, this is one of the more common forms of this condition. People with Broca's aphasia struggle to form words. They may repeat words or simple phrases over and over (but struggle to or can't repeat back something you say to them). People with the most severe cases can't make any sounds (mutism) or can only make a single sound at a time. While people with Broca's aphasia can't speak, they can still understand what other people are saying. They also can tell that something is wrong with their ability to speak. Broca's aphasia affects repetition, meaning a person with it might have trouble repeating back words or phrases you say to them. Damage to Broca's area, especially from strokes, often also affects a nearby part of the brain that controls muscles for movement. Because of that, people with Broca's aphasia are more likely to have at least some paralysis on one side of their body.

Wernicke's Aphasia

Also known as *fluent aphasia* or *receptive aphasia*, this is also a relatively common form of aphasia. People with Wernicke's aphasia usually don't have any trouble with the physical act of speaking. However, what they say is often confusing or doesn't make sense. People with this may use the wrong words or make up words. Experts sometimes call this "word salad." People with this type of aphasia struggle to understand what others are saying. They might understand very simple sentences, but the more complex the sentence or phrase, the harder it is to understand. Wernicke's aphasia affects repetition, meaning a

person with it might struggle to repeat back words or phrases you say to them. Wernicke's area of the brain is near parts of the brain that affect your sight, so people with this kind of aphasia often have vision problems, too. People with Wernicke's aphasia also often have anosognosia, a condition where your brain can't recognize or process signs of a medical problem you have. That means people with this often don't know or can't understand that they have this kind of aphasia.

Global Aphasia

This is the most severe form of aphasia. People with global aphasia struggle with the physical act of speaking. People with the most severe forms of this might only make small or isolated sounds, or they might not make any sounds at all (mutism). They also may repeat words or simple phrases over and over (this is a problem with fluency, as they'll still have trouble repeating back words or phrases you say to them). People struggle to understand what others are saying. They might understand very simple sentences, but the more complex the sentence or phrase, the harder it is to understand. Global aphasia affects repetition, meaning a person with it might struggle to repeat back words or phrases you say to them. This kind of aphasia happens with conditions that cause severe brain damage, such as major strokes or head injuries. The damage is usually severe and affects multiple parts of the brain, causing other serious symptoms like one-sided paralysis, blindness and more.

Other Forms of Aphasia

Transcortical motor aphasia is similar to Broca's aphasia but usually not as severe. A key difference is that people with this don't have a problem repeating back phrases or sentences you say to them.

Transcortical sensory aphasia is similar to Wernicke's aphasia but usually not as severe. Like with transcortical motor aphasia above, people with this type don't have a problem repeating back what you say. This type of aphasia is common with degenerative brain conditions like Alzheimer's disease.

Conduction aphasia affects fluency but not understanding. People with this struggle to pronounce words, especially when trying to repeat something you say to them.

Mixed transcortical aphasia is like global aphasia, except that people with this can still repeat what people say to them.

People with *anomic aphasia* struggle to find words, especially names of objects or words that describe actions. To get around this problem, they often

use several words to explain what they mean or non-specific words like "thing" instead.

Conditions That Involve or Look Like Aphasia

Several conditions may involve or resemble aphasia. *Progressive primary aphasia (PPA)*, despite its name, is a degenerative brain disorder distinct from injury- or stroke-related aphasia, which typically does not worsen over time. Individuals with PPA gradually lose the ability to speak, write, read, or understand spoken language, with the condition often associated with diseases such as frontotemporal dementia and Alzheimer's disease. Additionally, brain damage affecting speech control can lead to alexia and agraphia.

Alexia, or *word blindness*, results in the inability to recognize or read words, while *agraphia* involves a loss of the ability to write. These conditions can co-occur, but in rare instances, a person might experience alexia without agraphia, enabling them to write words they cannot subsequently read.

Another related condition is *auditory verbal agnosia*, where individuals can hear speech but cannot recognise it as language, due to disruptions in the brain areas responsible for processing sound or spoken language.

Unfortunately, there's no direct cure for aphasia. However, it's usually treatable in some way. The first step in treating aphasia is usually treating the condition that causes it. With conditions like stroke, quickly restoring blood flow to the affected area of the brain can sometimes limit or prevent permanent damage.

In cases where aphasia happens because of a temporary problem, such as from a concussion, migraine, seizure or some kind of infection, aphasia is often temporary, too. The aphasia usually gets better or goes away entirely as you recover and your brain heals with time and treatment.

For people who have long-term or permanent brain damage, like what happens with severe strokes, speech therapy can sometimes help a person's language abilities. These therapy options can also help a person with improving their understanding of others, and how to compensate for their aphasia. Speech therapy can also involve caregivers and loved ones, so they know how best to communicate with and help the patient.

Compiled from: URL: [https:// my.clevelandclinic.org/health/diseases/5502-aphasia](https://my.clevelandclinic.org/health/diseases/5502-aphasia) (Accessed 27.04.2024, 16:00h).

Activity 5. Read the text and complete the table.

	Statements	True	False
1	Individuals with Broca’s aphasia typically struggle to articulate words but maintain the ability to comprehend spoken language.		
2	The condition where a person can no longer recognise written words is known as agraphia.		
3	Progressive primary aphasia deteriorates over time and is commonly linked to neurodegenerative diseases such as frontotemporal dementia.		
4	Wernicke’s aphasia is marked by clear and coherent speech production but severe difficulties in understanding others.		
5	Global aphasia, often resulting from major brain injuries, affects speech fluency, comprehension, and the ability to repeat phrases.		
6	Therapeutic interventions for aphasia focus solely on improving the patient’s speech production capabilities.		

Activity 6. Work in pairs. Discuss why the following things were mentioned in the text.

1. Auditory verbal agnosia
2. Stroke
3. TBI
4. Alexia
5. Fluency, understanding and repetition
6. Mutism
7. Restoring blood flow
8. Concussion

Activity 7. Choose the topics to talk about. Prepare your ideas, then work in pairs and share your perspectives.

1. The functions of Broca's area and Wernicke's area in language processing.
2. Challenges individuals with aphasia face in their daily activities and social interactions.
3. The role of speech-language pathology in managing aphasia.
4. Common causes of aphasia in different age groups.
5. The current state of aphasia research.

Activity 8. Translate each Russian term into its English equivalent. Provide an explanation of the equivalence, similar to the example.

Russian term	English equivalent
моторная афазия	non-fluent aphasia

Equivalence explanation: while both terms describe speech production difficulties due to brain damage, "non-fluent aphasia" is a broader category that includes multiple subtypes, whereas "моторная афазия" (motor aphasia) specifically refers to Broca's aphasia.

One-word terms:

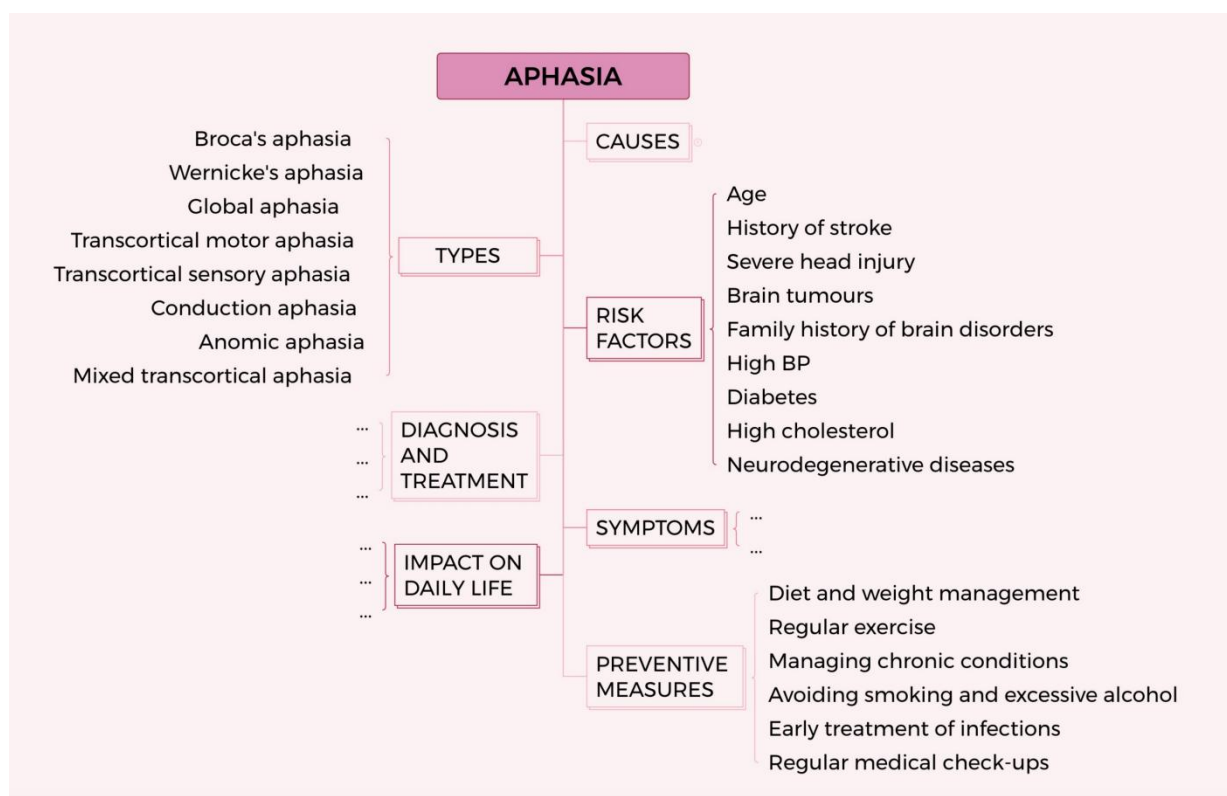
афазия, инсульт, ЧМТ, дисфазия, алексия, аграфия, мутизм, дизартрия, апраксия, агнозия, паралич, слепота, ППА (первичная прогрессирующая афазия), травма, ФТД (фронтотемпоральная деменция), РСА (речевая слуховая агнозия), сотрясение (мозга), мигрень, судороги, инфекция.

Terminological units:

поражение речевых центров, локализация поражения головного мозга, поддается лечению, полная или частичная потеря речи, чаще встречается у людей среднего и старшего возраста, симптомы инсульта, афазия Брока (экспрессивная, моторная), афазия Вернике (рецептивная, сенсорная), беглая речь, короткие фразы, понимание речи, повторение речи, трудоемкое речеобразование, речь почти бессмысленна, проблемы со зрением, нарушение письма, нейродегенеративные заболевания головного мозга, аномическая афазия, глобальная афазия, болезнь Альцгеймера, необратимые повреждения.

Activity 9. Analyse the fragment of the mind map for aphasia. Answer the questions.

1. Which types of aphasia are presented in the mind map?
2. How are the causes of aphasia connected to symptoms, types and treatment?
3. What role do risk factors play in the development of aphasia?
4. What preventive measures are suggested in the mind map?
5. What improvements can be made to the mind map to make it more comprehensive and precise?



Activity 10. In groups choose two categories from the mind map above and do research. Compile your findings and integrate them into the existing map.

Activity 11. Use the Corpus of Contemporary American English (COCA) to analyse the lexico-grammatical profiles of specific terms related to aphasia. Complete the table.

Terms:

neurodegenerative disease

agnosia

agraphia
alexia

Term	Collocations	POS	Syntactic patterns	Semantic roles	Example sentences
<i>aphasia</i>	<i>expressive, receptive, global, severe</i>	<i>noun</i>	<i>term + noun (aphasia patient) adjective + term (severe aphasia)</i>	<i>condition affecting language ability</i>	<i>The patient was diagnosed with severe aphasia.</i>

Activity 12. Use the Corpus of Contemporary American English (COCA) to explore the usage of the following abbreviations and acronyms related to aphasia. Complete the table.

Abbreviation/ acronym	Full form	Example sentence	Context of use
PPA			
TBI			
SPECT			
CVA			
FTD			
AD			
ALS			
MS			
TIA			
MRI			

Unit 26. Voice and Speech Management for Parkinson's Patients

Activity 1. Work in groups. Discuss the questions.

1. How does Parkinson's disease affect a patient's voice and speech abilities?
2. Which strategies are used in SLP to help Parkinson's patients improve their communication skills?
3. How can group communication therapy improve the quality of life for these patients?

Activity 2. Match the terms with their definitions.

Terms		Definitions	
1	Tremor	A	abnormally small handwriting or handwriting that becomes progressively smaller that is characteristic especially of Parkinson's disease
2	Hypophonia	B	difficulty controlling saliva, leading to saliva dribbling from the mouth
3	Bradykinesia	C	a type of shaking movement most often noticed in the hands and arms. It may affect any body part, including the head, tongue, or vocal cords
4	Dysarthria	D	a condition where muscle stiffness restricts movement
5	Micrographia	E	extreme slowness of movements and reflexes
6	Rigidity	F	a symptom characterised by an inability to start or continue movement
7	Freezing	G	reduced facial expression
8	Cognitive impairment	H	difficulty in articulating words due to disease of the central nervous system
9	Nonverbal communication	I	an abnormally weak voice due to lack of coordination of the speech muscles
10	Hypomimia	J	decline in mental abilities such as memory and thinking skills

11	Prosody	K	the use of gestures, facial expressions, and body language to communicate
12	Drooling	L	the rhythm, stress, and intonation of speech

*Compiled from: URL: <https://medlineplus.gov/ency/article/003192.htm>,
URL: <https://www.dictionary.com>, URL: www.merriam-webster.com/medical/, URL:
<https://www.parkinson.org/understanding-parkinsons/>(Accessed
27.04.2024, 12:00h).*

Activity 3. Work in pairs. Complete the K-W-L chart by listing what you already know about Parkinson’s disease and noting your questions on the topic. After completing the unit, fill in what you have learnt in the third column.

K-W-L chart on language disorders

K - Know	W - Want to know	L- learnt

Activity 4. Watch the video “Parkinson’s and Your Voice.”⁵ What did Dr Loochtan mention as signs that might indicate a Parkinson’s disease diagnosis during a voice assessment?



⁵ URL: <https://www.youtube.com/watch?v=2F-mIjIttZA&t=190s> (Accessed 28.04.2024, 10:00h).

Activity 5. Work in pairs. Compare your ideas and discuss.

1. What were the main communication challenges discussed in the video that individuals with Parkinson's disease often experience?
2. How do Dr Loochtan and the speech pathologist collaborate to help patients with Parkinson's disease improve their communication skills?

Activity 6. Watch the video again and complete the table.

	Statement	True	False
1	Voice projection issues are infrequent in individuals with Parkinson's disease.		
2	Most people with Parkinson's disease will not experience any voice or speech issues during the progression of the disease.		
3	Dr Loochtan highlights that non-pharmacological interventions are crucial in managing voice symptoms in Parkinson's patients.		
4	Vocal tremors in Parkinson's patients are always easy to identify and diagnose.		
5	Patients with Parkinson's disease often experience vocal fatigue, especially after prolonged speaking activities.		

Activity 7. Complete the table, using one word in each gap.

Aspect of disorder	Description	Impact on patient	Intervention focus
Voice projection	Difficulty in (1) _____ the voice loud enough.	Struggles to be (2) _____.	Improve vocal (3) _____.
Vocal clarity	Voice becomes (4) _____ and unclear.	Speech is hard to (5) _____.	Enhance vocal (6) _____.
Vocal tremor	Presence of (7) _____ in the voice.	Voice sounds shaky.	Reduce vocal tremors.

Vocal fatigue	Voice becomes weak and (8) _____ over time.	Difficulty maintaining speech.	Strengthen vocal (9) _____.
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Activity 8. Work in groups. Discuss the questions.

1. How can early identification of voice problems lead to a Parkinson's diagnosis?
2. What are the emotional and psychological impacts of voice issues on Parkinson's patients?
3. How does exercise improve vocal strength in Parkinson's patients?
4. What are the potential benefits and limitations of using vocal cord injections to treat voice issues in Parkinson's patients?
5. How do changes in vocal quality and clarity affect the daily lives and social interactions of Parkinson's patients?

Activity 9. Work in groups. Place the following key terms from the video under the most appropriate category below.

Voice projection, ENT specialist, vocal tremor, hoarse voice, vocal fatigue, weak voice, voice therapy, vocal clarity, vocal strengthening exercises, voice quality, movement specialist, neurologist, difficulty speaking, vocal cord injection, speech-language pathologist, holistic therapy, communication challenges, physical exercise, speech therapy.

Symptoms and challenges	Therapeutic interventions	Healthcare professionals	Medical procedures

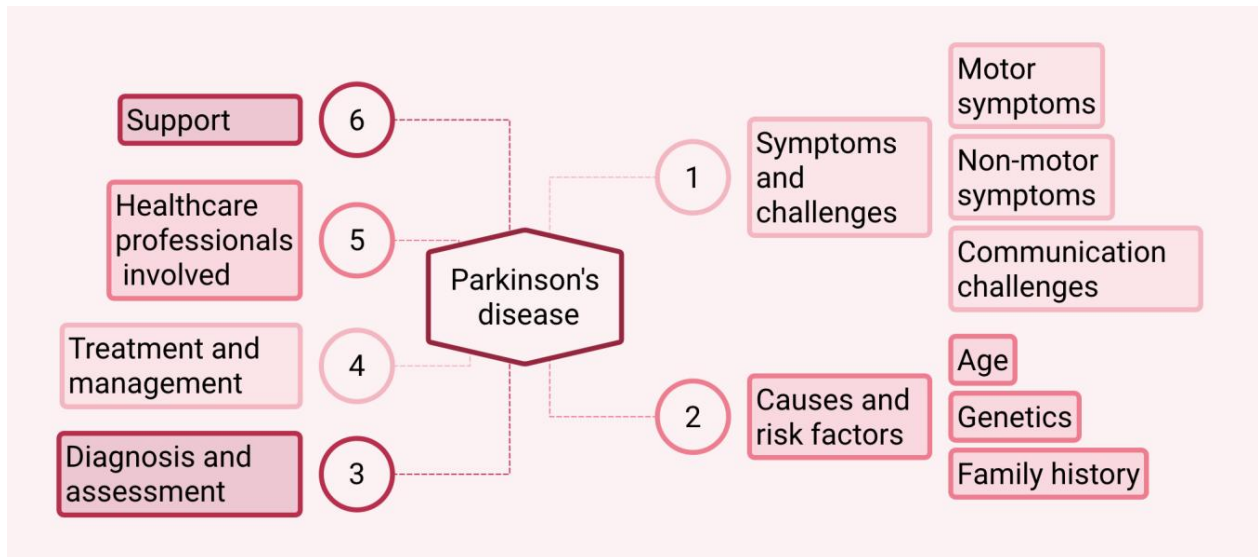
Activity 10. Work in groups. Answer the questions.

1. What are the primary motor and non-motor symptoms of Parkinson's disease?

2. What factors contribute to the development of Parkinson's disease?

3. What are the roles of different healthcare professionals in the treatment of Parkinson's disease?

4. What are the potential side effects of the medications commonly used to treat Parkinson's disease?



Activity 11. Work in groups. Choose one specific aspect related to Parkinson's disease and investigate it in depth. Expand the mind map.

Activity 12. Prepare a presentation on your research related to Parkinson's disease. Your presentation should include definitions, examples, and real-world applications.

Activity 13. Discuss in pairs.

1. What were the most important things you discovered about voice issues in Parkinson's patients?

2. How has your understanding of the symptoms, challenges, and treatments for voice issues in Parkinson's patients changed?

Activity 14. Reflect on the areas related to Parkinson's disease that you feel you need to explore further.

Unit 27. Communication Support for Patients with Amyotrophic Lateral Sclerosis

Activity 1. Work in groups. Discuss the questions.



1. What are the primary effects of ALS on the muscles and motor functions?

2. How can individuals with ALS maintain their ability to communicate as the disease progresses?

Stephen Hawking serves as role model for ALS patients

Source: URL: <https://edition.cnn.com/2009/HEALTH/04/20/hawking/>

Activity 2. Read the summary of the article and identify the core problem discussed in it.

Communication Support in ALS Using High-Tech AAC technologies

The article provides an overview of amyotrophic lateral sclerosis (ALS), a progressive neurodegenerative disease that affects motor neurons, leading to muscle weakness, paralysis, and ultimately, respiratory failure. ALS significantly affects communication abilities, as patients progressively lose control over the muscles needed for speech. Effective communication support is crucial for maintaining quality of life and ensuring patients can express their needs and desires as the disease progresses.

High-tech Augmentative and Alternative Communication (HT-AAC) technologies play a vital role in supporting communication for ALS patients. These technologies include speech-generating devices, eye-tracking systems, and other advanced tools that help patients communicate despite severe motor impairments. HT-AAC devices can significantly enhance the quality of life by allowing patients to maintain social interactions, express their needs, and retain a sense of autonomy.

The article discusses how HT-AAC technologies are implemented and their effectiveness in practical use. Key features of successful implementation include customising the devices to meet individual needs, providing adequate training for both patients and caregivers, and ensuring ongoing technical support. The effectiveness of HT-AAC devices is evident in improved communication abilities, enhanced patient satisfaction, and reduced frustration for both patients and their families.

Maintaining patient autonomy is a critical aspect of palliative care for ALS patients. Effective communication support through HT-AAC devices enables patients to make decisions about their care, express their preferences, and maintain control over their lives. This autonomy significantly reduces the psychological burden on caregivers, as they can better understand and respond to the needs of the patient, leading to improved care-giving experiences and reduced stress.

The article highlights the cognitive and behavioural impairments that can accompany ALS, such as difficulties with attention, memory, and executive functions. These impairments can affect the use of HT-AAC devices. Strategies to accommodate these challenges include simplifying device interfaces, providing consistent training, and using multi-sensory cues to facilitate communication. Addressing cognitive impairments is essential for ensuring the effective use of communication technologies and maximising their benefits.

Compiled from: Linse K., Aust E., Joos M., Hermann A. Communication Matters-Pitfalls and Promise of Hightech Communication Devices in Palliative Care of Severely Physically Disabled Patients With Amyotrophic Lateral Sclerosis. Front Neurol. 2018. № 9 (603). P.18.

Activity 3. Work in pairs. Discuss why the following things were mentioned in the article. Support your ideas by referring back to the text.

1. Impact of ALS on communication
2. Hi-tech AAC technologies
3. Eye-tracking systems
4. Sense of autonomy
5. Psychological burden
6. Consistent training

Activity 4. Read the annotated bibliography entry for the given article and answer the questions.

Citation:

Linse, K., Aust, E., Joos, M., & Hermann, A. (2018). Communication matters—Pitfalls and promise of high-tech communication devices in palliative care of severely physically disabled patients with amyotrophic lateral sclerosis. *Frontiers in Neurology*, 9, 603. <https://doi.org/10.3389/fneur.2018.00603>

Annotation:

This article discusses the benefits and challenges of using high-tech AAC devices in palliative care for ALS patients. It emphasises the importance of maintaining patient autonomy and reducing caregiver burden through effective communication support. The authors highlight both the potential and the pitfalls of these technologies, providing a balanced view of their application in clinical practice.

The source is credible, published in a peer-reviewed journal, and authored by experts in the field. It is highly relevant to the topic of communication support in ALS, offering valuable insights into the practical implementation of AAC technologies. This article will be useful in understanding the complexities of using high-tech devices to enhance communication in ALS patients and in identifying areas for further research.

1. What information is included in the citation?
2. What format is the citation (e.g., APA, ASC, AAA, etc.)?
3. What is covered in annotation?
4. Is the annotation clear?
5. Does the annotation evaluate the source's credibility? How?
6. How does the annotation reflect on the source's relevance to the research topic?

Activity 5. Match the citations formatted in different citation styles with the correct citation style from the list provided. One style is extra.

Discipline	Typical citation style
Economics	Harvard
Engineering & IT	IEEE
Humanities	Chicago, Harvard, MLA
Law	OSCOLA
Medicine	AMA, NLM, Vancouver
Political science	APSA
Psychology	APA
Sciences	ACS, Chicago, Harvard, CSE
Social studies	AAA, APA, ASA, Chicago

Compiled from: URL: University of Pittsburgh Library System. APA 7th edition citation guide. URL: from <https://pitt.libguides.com/citationhelp/> (Accessed 29.04.2024, 15:00h).

Styles: APA, MLA, Harvard, Chicago, AMA, IEEE, ASA

Citations:

1. Linse, K., Aust, E., Joos, M., & Hermann, A. (2018). Communication matters - Pitfalls and promise of high-tech communication devices in palliative care of severely physically disabled patients with amyotrophic lateral sclerosis. *Frontiers in Neurology*, 9, 603. <https://doi.org/10.3389/fneur.2018.00603>

2. Linse, K., Aust, E., Joos, M., and Hermann, A. "Communication Matters - Pitfalls and Promise of High-Tech Communication Devices in Palliative Care of Severely Physically Disabled Patients with Amyotrophic Lateral Sclerosis." *Frontiers in Neurology*, vol. 9, 2018, p. 603. <https://doi.org/10.3389/fneur.2018.00603>

3. Linse, K., Aust, E., Joos, M., & Hermann, A. (2018) 'Communication Matters - Pitfalls and Promise of High-Tech Communication Devices in Palliative Care of Severely Physically Disabled Patients with Amyotrophic Lateral Sclerosis', *Frontiers in Neurology*, 9, p. 603. <https://doi.org/10.3389/fneur.2018.00603>

4. [1] K. Linse, E. Aust, M. Joos, and A. Hermann, "Communication Matters - Pitfalls and Promise of High-Tech Communication Devices in Palliative Care of Severely Physically Disabled

Patients with Amyotrophic Lateral Sclerosis,” *Frontiers in Neurology*, vol. 9, p. 603, 2018. <https://doi.org/10.3389/fneur.2018.00603>

5. Linse K, Aust E, Joos M, Hermann A. Communication matters - Pitfalls and promise of high-tech communication devices in palliative care of severely physically disabled patients with amyotrophic lateral sclerosis. *Frontiers in Neurology*. 2018;9:603. <https://doi.org/10.3389/fneur.2018.00603>

6. Linse, K., Aust, E., Joos, M., and Hermann, A. “Communication Matters - Pitfalls and Promise of High-Tech Communication Devices in Palliative Care of Severely Physically Disabled Patients with Amyotrophic Lateral Sclerosis.” *Frontiers in Neurology* 9 (2018): 603. <https://doi.org/10.3389/fneur.2018.00603>

Activity 6. Examine the phrases from abstract and annotated bibliography and explain their meanings and implications.

1. This article discusses the benefits and challenges of using high-tech AAC devices in palliative care for ALS patients.

2. It emphasises the importance of maintaining patient autonomy and reducing caregiver burden through effective communication support.

3. The source is credible, published in a peer-reviewed journal, and authored by experts in the field.

4. The article provides an overview of amyotrophic lateral sclerosis (ALS), a progressive neurodegenerative disease that affects motor neurons, leading to muscle weakness, paralysis, and ultimately, respiratory failure.

5. The article discusses how HT-AAC technologies are implemented and their effectiveness in practical use.

6. The article highlights the cognitive and behavioural impairments that can accompany ALS, such as difficulties with attention, memory, and executive functions.

7. This article will be useful in understanding the complexities of using high-tech devices to enhance communication in ALS patients and in identifying areas for further research.

8. Addressing cognitive impairments is essential for ensuring the effective use of communication technologies and maximising their benefits.

9. The article is highly relevant to the topic of communication support in ALS, offering valuable insights into the practical implementation of AAC technologies.

Activity 7. Explore how the following terms are used in various genres and contexts in the Corpus of Contemporary American English (COCA). Answer the questions and complete the table.

Neuromuscular weakness, progressive bulbar dysarthria, speech intelligibility, communication barriers, ALS support, voice amplification devices, neurological assessment

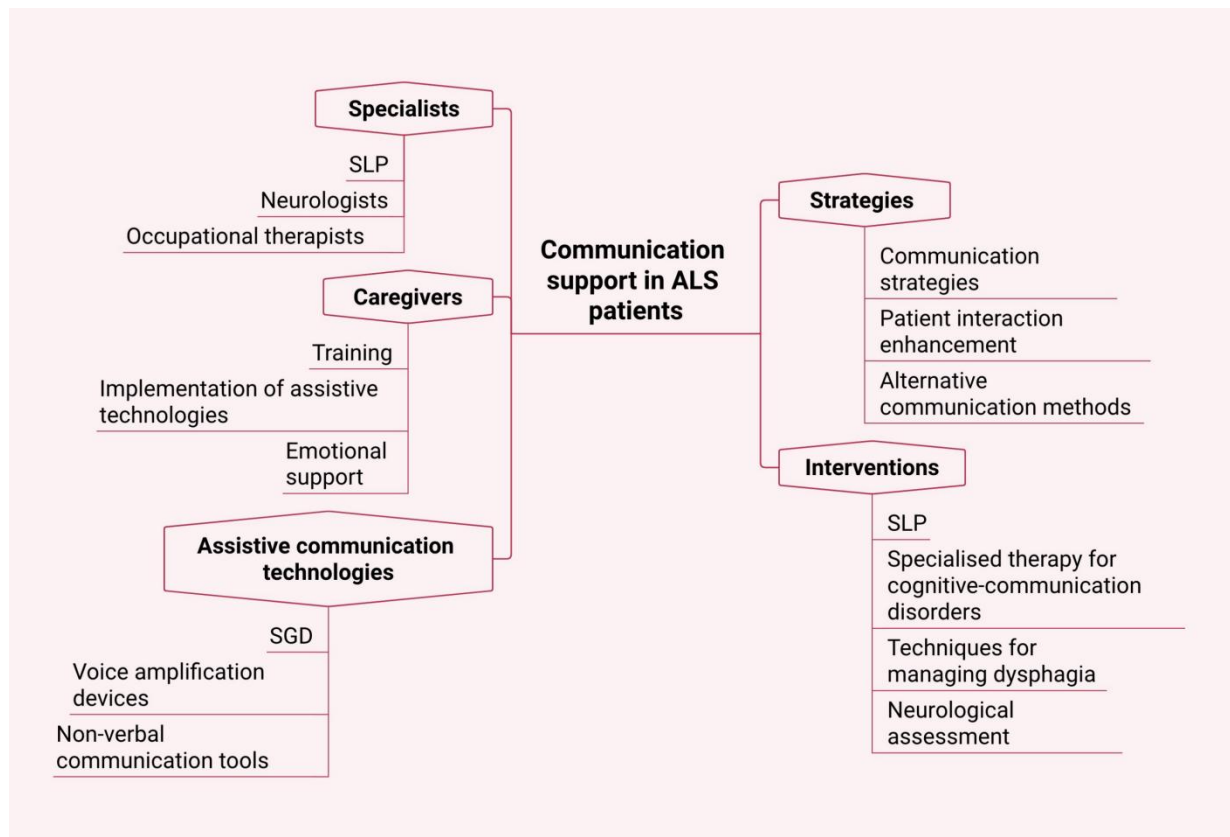
1. In what genres are these terms used most?
2. What are the common collocations (with these terms)?
3. What contexts or situations are these terms commonly associated with?

Terms	Genres	Collocations	Contexts
Neuromuscular weakness			
progressive bulbar dysarthria			
speech intelligibility			
communication barriers			
ALS support			
voice amplification devices			
neurological assessment			

Activity 8. Work in groups. Brainstorm terms related to ALS. Discuss how terms relate to each other. Use arrows or lines to show connections:

e.g., motor neuron degradation → leads to → neuromuscular weakness.

Activity 9. Work in groups. Organise your ideas and expand the mind map below.



Activity 10. Use academic databases to find a scholarly article about communication challenges in ALS. Write a summary of the article.

Activity 11. Select two citation styles and write annotated bibliography entries in both citation styles.

Each entry should include:

1. Citation (full reference)
2. Summary of the article's content (150-200 words)
3. Evaluation of the source's credibility

Activity 12. Review other students' entries and identify the citation styles they have used. Provide feedback on the accuracy of the citation formats and the quality of the annotations.

Unit 28. Traumatic Brain Injury and Communication Disorders

Activity 1. Discuss in pairs.

1. What are some common communication disorders that can result from a traumatic brain injury?
2. How might the severity and location of a brain injury influence the type of communication difficulties experienced by a patient?

Activity 2. Read the provided patient information document. What communication challenges Kevin faces due to his traumatic brain injuries?

Case Study: Post-TBI Patient Patient Profile

Name: Kevin

Age: 35

Gender: male

Injury date: sustained severe TBI at 18, and a second TBI at 19.

Medical History

Pre-injury health: active, played baseball, attended community college.

First injury details: car accident due to fatigue, resulting in a severe TBI.

Second injury details: car accident as a passenger, resulting in a second TBI and a hip injury and requiring multiple surgeries.

Initial Assessment

Neurological exam:

Coma for 7 days after the first accident.

Short-term memory impairment.

Dysarthria (slurred, slow speech requiring effort).

Attention and concentration difficulties.

Right-sided hemiplegia and balance issues.

Speech and language assessment:

Expressive aphasia (difficulty in expressing thoughts verbally).

Cognitive-communication disorder (issues with attention, memory, and executive function).

Swallowing assessment:

Mild dysphagia.

Diagnosis

Severe Traumatic Brain Injury (TBI)

Dysarthria

Expressive aphasia

Cognitive-communication disorder

Mild dysphagia

Treatment Plan

SLP	Physical therapy	Occupational therapy
<ul style="list-style-type: none"> ✓ Focus on improving articulation and speech clarity. ✓ Cognitive-communication skill enhancement exercises (memory, attention, problem-solving). ✓ Swallowing exercises to address dysphagia. 	<ul style="list-style-type: none"> ✓ Strengthening exercises for right-sided weakness. ✓ Balance and coordination exercises. 	<ul style="list-style-type: none"> ✓ Activities to improve daily living skills. ✓ Use of assistive devices as needed.

Neurological Follow-up: regular check-ups to monitor neurological status and progress.

Goals

Short-term goals:

1. Improve speech intelligibility to 70% in structured tasks.
2. Enhance short-term memory and attention span.
3. Safe swallowing with minimal coughing.

Long-term goals:

1. Achieve 90% speech intelligibility in spontaneous conversation.
2. Return to work with accommodations as needed.
3. Maintain independence in daily activities.

Family and caregiver involvement:

1. Training on communication strategies to support the patient.
2. Education on safe swallowing techniques.
3. Psychological support and counselling.

Designed based on: Roscigno C.I., Van Liew K. Pushed to the margins and pushing back: a case study of one adult's reflections on social interactions after a traumatic brain injury sustained as an adolescent. J Neurosci Nurs. 2008. № 40 (4). Pp. 212-221.

Activity 3. Discuss in groups.

1. How do different therapies (speech, physical, occupational) work together to address Kevin's overall rehabilitation needs?
2. What role do family and caregivers play in Kevin's rehabilitation process?
3. Based on Kevin's case, what are the key factors that should be considered when developing a treatment plan for a patient with multiple TBIs?
4. What are the potential long-term goals for Kevin's rehabilitation?
5. What is the prognosis for Kevin's recovery given his medical history and current treatment plan?
6. What factors could influence his long-term outcomes?

Activity 4. Collaborative project. Design a detailed patient progress report for a post-TBI patient.

Kevin, a 35-year-old man, has sustained two traumatic brain injuries. The first injury occurred at age 18 due to a car accident, resulting in severe TBI and a coma lasting seven days. The second TBI occurred at age 19 in another car accident, which also led to a hip injury requiring multiple surgeries. Kevin currently faces various communication challenges, including dysarthria, expressive aphasia, and cognitive-communication disorders. He also experiences mild dysphagia and right-sided hemiplegia.

Your team is part of the multidisciplinary care team responsible for Kevin's rehabilitation. You should design a progress report to track his recovery and plan ongoing interventions.

Guidelines:

1. Gather relevant information from the patient information document.
2. Hold a group meeting to discuss Kevin's case and outline the key areas of the progress report.
3. Divide the progress report into sections based on the expertise of each member of the group: speech-language pathologist, occupational therapist, neurologist, caregiver coordinator. Each member drafts their section, considering Kevin's specific needs and their professional role.
4. Draft the collaborative report. Include patient information, assessment details, treatment plan and goals, progress summary, recommendations and prognosis. Detail the strategies for organising family training and involvement.

Activity 5. Present your patient progress report and key recommendations to the class.

Activity 6. Arrange the following phrases for conducting therapy sessions according to their function. Add more examples to the table.

1. Hello, Kevin! Today we are here to talk about your rehabilitation plan.
2. Our primary goal is to help you recover your abilities and resume your regular activities.
3. Therapy sessions will include exercises to improve your motor skills.
4. If any exercise feels too difficult or easy, let us know so we can modify it accordingly.
5. One of our focuses will be enhancing your speech and communication skills.
6. It's important to practise these exercises daily to see improvement.
7. We'll work on improving your cognitive functions, specifically memory and attention.
8. You'll participate in cognitive tasks designed to boost your mental acuity.

9. We're also going to concentrate on strengthening your physical coordination and balance.

10. We'll monitor your progress regularly and adjust the plan as needed.

Functions	Phrases
Beginning the session	
Establishing goals	
Detailing objectives	
Explaining treatment	
Setting expectations	
Adapting plans	

Activity 7. Prepare for the role-play according to the guidelines in your role-play card.

Scenario

A speech-language pathologist in a rehabilitation clinic and is going to conduct a rehabilitation planning session with a post-TBI patient called Kevin. The aim of the session is to explain the rehabilitation goals and plan, detail specific objectives, outline treatment components, set expectations, and discuss the adaptability of the plan based on progress and feedback.

Role card 1	Role card 2	Role card 3
<p>Role: SLP Goal: conduct the session. Introduce rehabilitation plans, establish goals and objectives, explain treatment components and daily exercises.</p>	<p>Role: Kevin, post-TBI patient Goal: speak openly about your feelings and current abilities. Ask questions about the rehabilitation process, express your doubts</p>	<p>Role: Mary, Kevin's wife Goal: support your husband during the session. Actively participate in discussion, ask questions about ways</p>

Role card 1	Role card 2	Role card 3
Set realistic expectations about the recovery process. Explain that the process will be closely monitored and adjusted based on Kevin's progress and feedback.	and concerns regarding the treatment plan. Ask for advice on how to manage your daily challenges.	to be involved in the rehabilitation process and how to provide support at home. Provide additional information about Kevin's needs and any challenges he faces.

Activity 8. Role-play the rehabilitation planning session. Use the phrases.

Activity 9. Discuss in groups.

1. Which strategies and techniques can be used to effectively support communication in post-TBI patients?
2. What is the role of family members in the communication rehabilitation process of the post-TBI patients
3. What challenges might post-TBI patients face during their communication rehabilitation? How can these challenges be addressed?

Activity 10. Reflect on the most important points you discovered about supporting communication in post-TBI patients.

REFERENCES

1. DeRuyter F. & Donoghue K. Communication and traumatic brain injury: a case study. *Augmentative and Alternative communication*. 1989. № 5 (1). Pp. 49–54.
2. Douglas J.M., Knox L., De Maio C., Bridge H. Improving Communication-specific Coping after Traumatic Brain Injury: Evaluation of a New Treatment using Single-case Experimental Design. *Brain Impairment*. 2014. № 15 (3). Pp. 190–201.
3. Fridriksson J, Hillis AE. Current Approaches to the Treatment of Post-Stroke Aphasia. *J Stroke*. 2021. № 23 (2). Pp. 183–201.
4. Hoffmann M., Chen R. The spectrum of aphasia subtypes and etiology in subacute stroke. *J Stroke Cerebrovasc Dis*. 2013. № 22 (8). Pp. 1385–1392.
5. Jiménez de la Peña M.M., Gómez Vicente L., García Cobos R., Martínez de Vega V. Neuroradiologic correlation with aphasias. Cortico-subcortical map of language. *Radiologia (Engl Ed)*. 2018. № 60 (3). Pp. 250–261.
6. Linse K., Aust E., Joos M., Hermann A. Communication Matters-Pitfalls and Promise of Hightech Communication Devices in Palliative Care of Severely Physically Disabled Patients With Amyotrophic Lateral Sclerosis. *Front Neurol*. 2018. № 9. 603.
7. Ma A., Lau K.K., Thyagarajan D. Voice changes in Parkinson's disease: What are they telling us? *J Clin Neurosci*. 2020. № 72. Pp. 1–7.
8. Murphy J. Communication strategies of people with ALS and their partners. *Amyotroph Lateral Scler Other Motor Neuron Disord*. 2004. № 5 (2). Pp. 121–126.
9. Roberts C.M., Spitz G., Mundy M., Ponsford J.L. Retrograde Personal Semantic Memory During Post-Traumatic Amnesia and Following Emergence. *J Int Neuropsychol Soc*. 2018. № 24 (10). Pp. 1064–1072.
10. Roscigno C.I., Van Liew K. Pushed to the margins and pushing back: a case study of one adult's reflections on social interactions after a traumatic brain injury sustained as an adolescent. *J Neurosci Nurs*. 2008. № 40 (4). Pp. 212–221.

11. Sheppard SM, Sebastian R. Diagnosing and managing post-stroke aphasia. *Expert Rev Neurother.* 2021. № 21 (2). Pp. 221–234.
12. Sinanović O, Mrkonjić Z, Zukić S, Vidović M, Imamović K. Post-stroke language disorders. *Acta Clin Croat.* 2011. № 50 (1). Pp. 79–94.
13. Steel J., Ferguson A., Spencer E., Togher L. Social communication assessment during post-traumatic amnesia and the post-acute period after traumatic brain injury. *Brain Inj.* 2017. № 31 (10). Pp. 1320–1330.
14. Suppa A, Costantini G, Ascì F, Di Leo P, Al-Wardat MS, Di Lazzaro G, Scalise S, Pisani A, Saggio G. Voice in Parkinson's Disease: A Machine Learning Study. *Front Neurol.* 2022. № 13. P. 12.

Online sources

1. American Speech-Language-Hearing Association. Traumatic brain injury in adults. ASHA Practice Portal. URL: https://www.asha.org/practice-portal/clinical-topics/traumatic-brain-injury-in-adults/#collapse_4 (Accessed 29.04.2024, 12:00h).
2. Brain Injury Association of America. Brain Injury. URL: <https://www.biausa.org/brain-injury> (Accessed 29.04.2024, 12:30h).
3. Cleveland Clinic. (n.d.). Aphasia. Retrieved June 12, 2024, from <https://my.clevelandclinic.org/health/diseases/5502-aphasia> (Accessed 29.04.2024, 13:00h).
4. Morrison T. Speech therapy progress report. The Adult Speech Therapy Workbook. URL: <https://theadultspeechtherapyworkbook.com/speech-therapy-progress-report/> (Accessed 29.04.2024, 15:00h).
5. Parkinson's Foundation. Homepage. URL: <https://www.parkinson.org/> (Accessed 28.04.2024, 12:45h).
6. University of Pittsburgh Library System. APA 7th edition citation style guide. URL: <https://pitt.libguides.com/citationhelp/apa7> (Accessed 29.04.2024, 16:00h).

MODULE 8

ASSESSMENT AND EVALUATION IN SPEECH-LANGUAGE PATHOLOGY

In this module, you will practise:

Skills focus

Reading	Holistic Approach to Diagnosing Dysphagia
Listening	What Is Dysarthria and How to Manage It? Ways to Assess Dysarthria
Writing	An assessment and intervention plan for a patient with hypernasality
Speaking	Collaborative project: A proposal of advanced technologies for assessing speech and language disorders Role-play: A technology-based interviews with paediatric and geriatric patients

Language focus

Professional terminology
Dysphagia, swallowing, aspiration, saliva, secretion, chewing, dehydration, malnutrition, pneumonia, radiologist, physiotherapist, severity (of swallowing disorder), nature (of swallowing disorder), referral (for examination), indications (for instrumental diagnostics), contraindications (for instrumental examination), range (of motion), coordination, esophageal motility, instrumental diagnosis of dysphagia, clinical diagnosis of dysphagia, assessment of swallowing function, symptoms of dysphagia, fatigue during meals, swallowing physiology, etc.
Functional language for academic and professional writing
A history of adenoidectomy and concerns about his speech sounding “stuffy.” Gather information about Tom’s medical history, including any surgeries or health conditions. Perform a thorough examination of Tom’s oral structures, including the velum, to assess for any anatomical abnormalities. Administer a nasalance assessment using a nasometer, etc.
Functional language for academic and professional speaking
Could you please tell me more about your speech concerns? Your test results show that there are some areas we need to work on, but you’ve made great progress. We’ll now proceed with a video-based comprehension test to assess your understanding, etc.

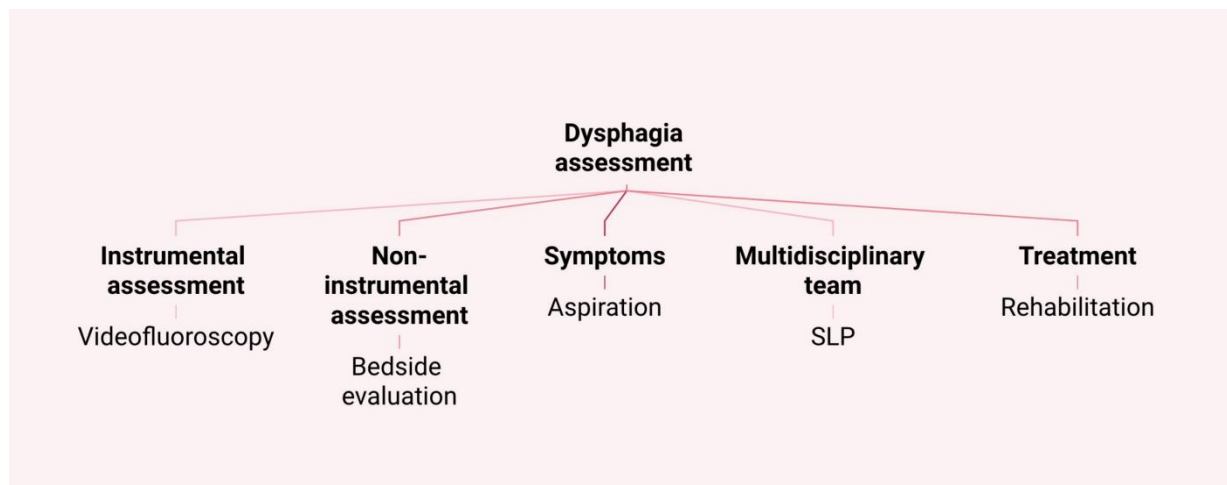
Unit 29. Clinical Expertise in Dysphagia Assessment

Activity 1. Work in pairs. Answer the questions.

1. What are some key challenges and complexities associated with comprehensive assessment of dysphagia?
2. Why are initial screenings for dysphagia important in the assessment process?
3. Can they help healthcare professionals identify individuals at risk of swallowing difficulties? How?

Activity 2. Add terms related to dysphagia assessment to the mind map that illustrates their interconnections.

Terms: oral motor examination, diet modification, odynophagia, FEES (fiberoptic endoscopic evaluation of swallowing), cough reflex assessment, physician, manometry, radiologist, drooling, dietitian, ultrasound, therapeutic strategies, cervical auscultation, patient outcomes.



Activity 3. Match terms related to instrumental and non-instrumental tools of assessing dysphagia with their definitions.

Terms	Definitions
videofluoroscopy	flexible endoscope assessment of swallowing
Fiberoptic Endoscopic Evaluation of Swallowing	clinical observation and examination

Terms	Definitions
manometry	assessment of oral muscle function
ultrasound	real-time X-ray imaging of swallowing
bedside evaluation	evaluation of the protective reflex during swallowing
oral motor examination	measures esophageal pressure during swallowing
cough reflex assessment	listening to sounds during swallowing
cervical auscultation	evaluates tongue and hyoid bone movement

Source: American Speech-Language-Hearing Association. Non-Instrumental Swallowing Assessment. URL: https://www.asha.org/practice-portal/clinical-topics/adult-dysphagia/#collapse_5 (Accessed 01.05.2024, 09:00h).

Activity 4. Read the text. What are the key differences between non-instrumental and instrumental swallowing assessments for diagnosing dysphagia?

Instrumental and Non-Instrumental Assessments of Dysphagia

The purpose of a non-instrumental swallowing assessment is to determine the presence (or absence) of signs and symptoms of dysphagia, with consideration for factors such as fatigue during a meal, posture, positioning, and environmental conditions. Verification of aspiration and thorough assessment of impairments in swallowing physiology or laryngeal/pharyngeal/upper esophageal anatomy require instrumental assessment.

A non-instrumental swallowing assessment may include a medical chart review as well as an assessment or consideration of:

- ✓ overall physical, social, behavioural, and cognitive/communicative status;
- ✓ the patient's perception of function, severity, change in functional status, and quality of life;
- ✓ vocal quality at baseline;
- ✓ physiological status and vital signs, including heart rate, oxygen saturation, and respiratory rate as well as respiratory/swallowing pattern, which may vary across individuals and across the life span (Martin-Harris et al., 2005);

- ✓ secretion management skills, which might include frequency and adequacy of spontaneous saliva swallowing and the ability to swallow voluntarily;

- ✓ cranial nerve function;
- ✓ posture and positioning for feeding;
- ✓ status of oral care.

During or following bolus delivery during per os (P.O.) trials including consistencies typically consumed by the patient in their natural environment, the SLP may assess:

- ✓ labial seal, anterior spillage and evidence of oral control, including mastication and transit, manipulation of the bolus, presence of hyolaryngeal excursion as observed externally or to palpation, and time required to complete the swallow sequence;

- ✓ behavioural signs and symptoms, such as throat clearing or coughing before/during/after the swallow, which may not always be indicators of penetration and/or aspiration;

- ✓ the impact of fatigue and/or respiratory function on swallowing;
- ✓ changes to physiological status/vital signs/voice quality; and
- ✓ the patient's use of additional equipment, as appropriate (e.g., adaptive drinking cups).

The clinical examination may inform recommendations for the management of dysphagia (Garand et al., 2020), including:

- ✓ identifying clinical presentations of dysphagia;
- ✓ identifying potential risks and benefits initiating or modifying oral intake (e.g., risks of dehydration/malnutrition);
- ✓ determining the need for additional instrumental evaluation; and
- ✓ specifying diagnostic questions to be answered by instrumental evaluations.

The non-instrumental assessment of swallowing is insufficient to infer specific information about laryngeal, pharyngeal, or upper esophageal anatomy and physiology required to develop effective treatment options and prevent consequences of dysphagia, such as dehydration, malnutrition, pneumonia, and death (Garand et al., 2020).

SLPs use instrumental techniques to evaluate oral, pharyngeal, laryngeal, upper esophageal, and respiratory function as they apply to

normal and abnormal swallowing. Instrumental procedures are also used to determine appropriateness and effectiveness of treatment strategies.

In clinical settings, SLPs typically use one of two types of instrumental evaluation: the videofluoroscopic swallowing study (VFSS) or the flexible endoscopic evaluation of swallowing (FEES), sometimes also called fibre-optic endoscopic evaluation of swallowing. The VFSS is also known as the modified barium swallow study (MBSS) and is a radiographic procedure used to gain further information regarding dysphagia.

Instrumental techniques are usually conducted either independently by the SLP or by the SLP in conjunction with other members of the interprofessional team (e.g., radiologist, radiologic technologist, physiatrist, otolaryngologist). SLPs help guide medical decision making regarding the appropriateness of these procedures given the severity and nature of the patient's swallowing deficits. SLPs interpret and apply the results of imaging to dysphagia treatment plans and make recommendations and referrals as appropriate. SLPs do not require special certification from any entity to perform instrumental assessments. However, per the ASHA Code of Ethics, SLPs should have appropriate training and demonstrate competency before completing instrumental techniques. Instrumental assessments may be recommended and completed regardless of setting (e.g., hospital, skilled nursing facility) in which the services are delivered.

Indications for an instrumental exam include the following:

- ✓ concerns regarding the safety and efficiency of swallow function
- ✓ contribution of dysphagia to nutritional compromise
- ✓ contribution of dysphagia to pulmonary compromise
- ✓ contribution of dysphagia to concerns for airway safety (e.g., choking)
- ✓ the need to identify disordered swallowing physiology to guide management and treatment
- ✓ the need to assist in the determination of a differential medical diagnosis related to the presence of dysphagia
- ✓ the presence of a medical condition or diagnosis associated with a high risk of dysphagia
- ✓ previously identified dysphagia with a suspected change in swallow function; and

✓ the presence of a chronic degenerative condition with a known progression or the recovery from a condition that may require further information for the management of oropharyngeal function.

General contraindications for an instrumental exam include, but are not limited to, the following:

✓ The patient is not medically stable enough to participate in the procedure.

✓ The patient is severely agitated, unable to remain alert, or unable to follow simple commands.

✓ The patient has anatomical deviations (e.g., head/neck, digestive tract) that preclude use of barium or use of an endoscopy.

Instrumental assessment may include components of non-instrumental swallowing assessment. The purpose of the instrumental examination is to enable the SLP to perform the following tasks:

✓ Assess the anatomy and physiology of the structures involved in swallowing and to analyse and measure range of motion and coordination or timing of movement. Some inferences may be made concerning sensation and pressure generation of the swallowing mechanism.

✓ Determine the presence, cause, and severity of dysphagia by visualising bolus control, the flow and timing of the bolus, and the individual's response to bolus misdirection and residue.

✓ Visualise the presence, location, and amount of secretions in the hypopharynx and larynx the patient's sensitivity to the secretions; and the ability of spontaneous or facilitated efforts to clear the secretions.

✓ Determine the presence and cause(s) of laryngeal penetration and/or aspiration.

✓ Determine with specificity the relative safety and efficiency of various bolus consistencies and volumes.

✓ Determine the presence of silent aspiration.

✓ Visualise the structures of the upper aerodigestive tract.

Implementation of any instrumental procedure requires the SLP to have advanced knowledge and specific skills in order to:

✓ determine an appropriate test protocol;

✓ make decisions regarding examination administration/procedures during the examination, as necessary;

- ✓ integrate knowledge of anatomy and physiology in order to assess oral, pharyngeal, and cervical esophageal swallowing physiology;
 - ✓ make informed treatment diagnoses and diet consistency recommendations;
 - ✓ help inform prognosis for imminent and long-term improvement;
- and
- ✓ understand issues relative to radiation equipment, equipment maintenance, and safety.

Qualified SLPs may also screen for esophageal motility and gastroesophageal reflux disease (GERD) to identify the need for appropriate referral. Oropharyngeal function may be potentially affected in some patients with esophageal motility issues.

ASHA recognises the autonomy of SLPs in completing the VFSS. However, other parties (e.g., state regulatory agencies) may require a radiologist to be present during the VFSS.

Source: American Speech-Language-Hearing Association. Non-Instrumental Swallowing Assessment. URL: https://www.asha.org/practice-portal/clinical-topics/adult-dysphagia/#collapse_5 (Accessed 01.05.2024, 09:00h).

Activity 5. Read the text and complete the table.

	Statements	True	False
1	Non-instrumental swallowing assessments alone are capable of identifying detailed anatomical and physiological abnormalities in dysphagia patients.		
2	Techniques such as VFSS and FEES provide direct visualisation of swallowing mechanisms, including the detection of aspiration.		
3	Evaluating a patient's breathing patterns during swallowing is impossible with non-instrumental assessments.		

	Statements	True	False
4	SLPs must obtain special certification to conduct instrumental swallowing assessments like VFSS and FEES.		
5	Conditions with a chronic degenerative nature do not require instrumental swallowing assessments since they are ongoing.		
6	Instrumental swallowing assessments are performed exclusively by SLPs.		

Activity 6. Work in pairs. Discuss why the following things were mentioned in the text.

1. Medical chart review
2. FEES
3. Spontaneous saliva swallowing
4. Hyolaryngeal excursion
5. Upper aerodigestive tract
6. Cervical esophageal swallowing physiology
7. GERD
8. VFSS
9. Oropharyngeal function

Activity 7. Choose the topics to talk about. Prepare your ideas, then work in pairs and share your perspectives.

1. Limitations and advantages of instrumental and non-instrumental assessments of dysphagia.
2. Role of Cranial Nerve Function in Swallowing
3. Secretion Management in Dysphagia
4. Impact of Fatigue on Swallowing Function
5. Technological Advancements in Swallowing Assessments

Activity 8. Complete the text with the appropriate terms related to assessing dysphagia.

Terms: *instrumental, cranial, non-instrumental, secretion, aspiration, respiration*

The purpose of a (1) _____ swallowing assessment is to determine the presence of dysphagia symptoms without using specialised equipment. Non-instrumental assessments often include evaluating a patient's overall physical, social, behavioural, and cognitive/communicative status, as well as their (2) _____ nerve function. On the other hand, (3) _____ techniques such as VFSS and FEES provide detailed visualisations of swallowing physiology and can identify issues such as (4) _____ and penetration. Observing the coordination between breathing and swallowing is crucial for understanding the (5) _____ pattern. Proper (6) _____ management skills are essential for patients with dysphagia to handle saliva and secretions effectively.

Activity 9. Translate each Russian term into its English equivalent. Provide an explanation of the equivalence, similar to the example.

Russian Term	English equivalent
instrumental assessment	инструментальная диагностика

Equivalence explanation: the terms share a common meaning in the healthcare context. They both refer to diagnostic methods that involve the use of specialised equipment or instruments to gather objective data about a patient's condition.

One-word terms:

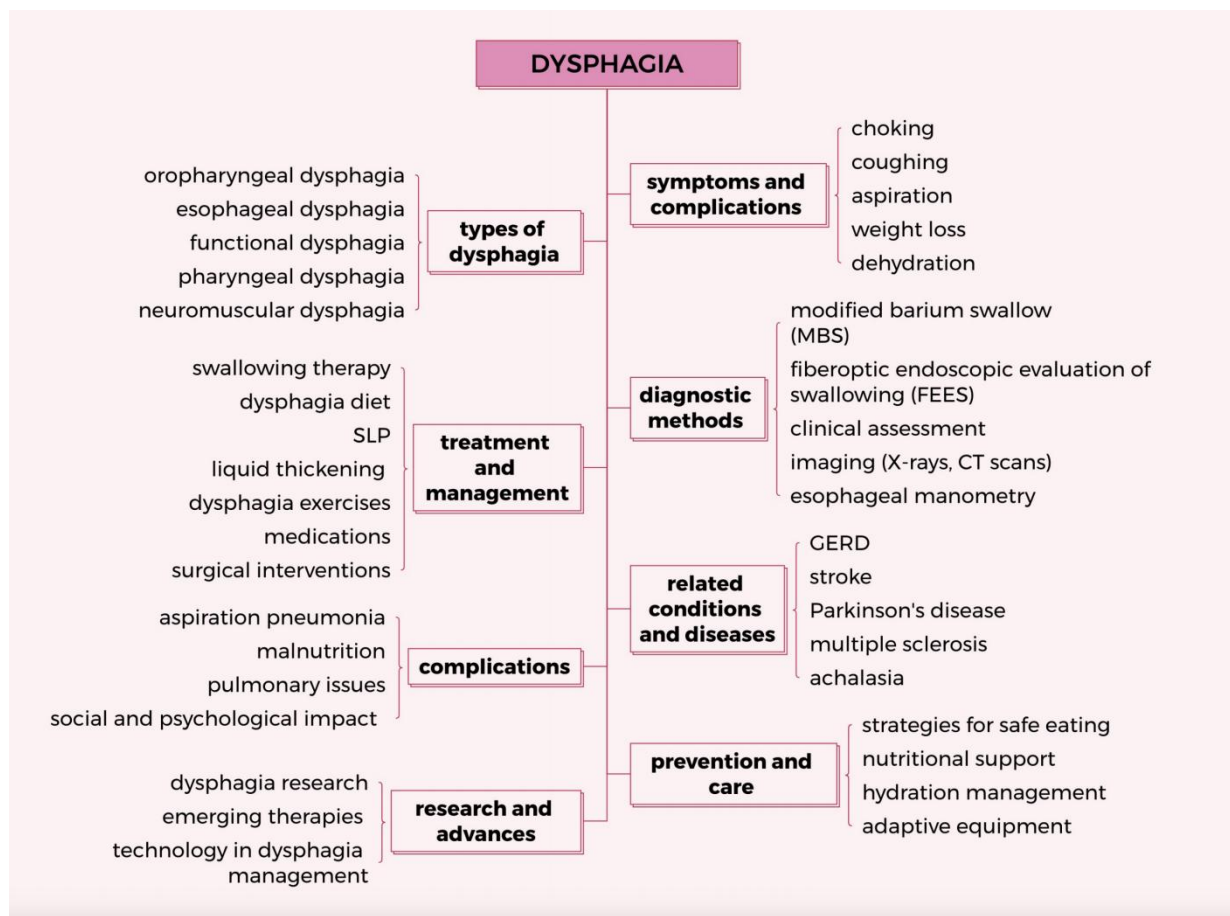
дисфагия, глотание, аспирация, слюна, сглатывание, секреция, жевание, обезвоживание, недоедание, пневмония, рентгенолог, физиотерапевт, тяжесть (нарушения глотания), характер (нарушения глотания), направление (на обследование), показания (к проведению инструментальной диагностики), противопоказания (для проведения инструментального обследования), диапазон (движения), координация, моторика (пищевода).

Terminological units:

инструментальная диагностика дисфагии, оценка функции глотания, симптомы дисфагии, усталость во время приема пищи,

нарушений физиологии глотания, нарушение анатомии гортани/глотки/верхней части пищевода, анализ медицинской карты, физический статус пациента, коммуникативный статус пациента, жизненные показатели, частота сердечных сокращений, насыщение кислородом, частота дыхания, черепные нервы, при пальпации, лечение дисфагии, выявление клинических проявлений дисфагии, получение конкретной информации об анатомии и физиологии гортани, глотки или верхней части пищевода, предотвращения последствий дисфагии, видеофлюороскопическое исследование глотания, гибкая эндоскопическая оценка глотания, модифицированное исследование глотания с барием, протокол обследования, проводить скрининг, гастроэзофагеальная рефлюксная болезнь.

Activity 10. Explore the fragment of the mind map for dysphagia and answer the questions in pairs.



1. What are the primary types of dysphagia? How do they differ in their underlying causes and symptoms?
2. What are the common complications associated with dysphagia?
3. How do the diagnostic methods specified in the map help diagnose dysphagia?
4. What are some management options for dysphagia? How do they vary based on the severity of the condition?
5. Explore the related conditions associated with dysphagia (e.g., GERD, stroke, etc.). How can these conditions contribute to or be affected by dysphagia?
6. Discuss the potential complications of dysphagia, such as aspiration pneumonia and malnutrition. How can these complications be prevented in individuals with dysphagia?
7. Research emerging therapies related to dysphagia. What recent advancements or technological innovations are being explored to enhance the diagnosis and treatment of dysphagia?

Activity 11. Expand the mind map. Add examples, definitions, and clarifications.

Activity 12. Select key terms related to the assessment and treatment of dysphagia. Translate them into Russian. Discuss the similarities and differences in the terminology used in both languages. Complete the table.

1. Are there direct translation equivalents between English and Russian dysphagia terms?
2. What are the differences in conceptualising dysphagia between English and Russian? Are there nuances in understanding or classification?
3. Do cultural factors influence terminology choice in English and Russian SLP? How do cultural contexts affect terminology usage?
4. How does terminology impact clinical practice? What are the implications for assessment, diagnosis, or treatment in each language?

Considerations	Findings
translation equivalents	

conceptual differences	
cultural considerations	
clinical relevance	

Activity 13. Explore terms associated with the risks and complications of dysphagia in the Corpus of Contemporary American English (COCA). Complete the table.

	Frequency	Context	Collocations
aspiration pneumonia			
malnutrition			
dehydration			
weight loss			
coughing			
choking			
respiratory distress			

1. Which of the selected terms appear most frequently? Can you rank terms based on frequency of occurrence?
2. Can you identify any trends or changes in the frequency of these terms over time?
3. What are the common contexts in which these terms are used? Are there recurring themes or situations?

4. Are there examples of how these terms are used in clinical case studies, patient records, or medical literature within the corpus?

5. Identify common words or phrases that frequently collocate with each of the selected terms. What patterns or associations do you observe?

Activity 14. Find examples of the following terms in the Corpus of Contemporary American English (COCA). Are they used as professional SLP or medical terms? Note any differences or variations in meaning between the two contexts.

Terms: bolus, oral-motor exercises, dysphagia evaluation, oral-pharyngeal transit time, Modified Barium Swallow (MBS), Fiberoptic Endoscopic Evaluation of Swallowing (FEES), dysphagia therapy, aspiration risk, oral-pharyngeal phase, aspiration pneumonia, esophageal manometry, Gastroesophageal Reflux Disease (GERD), Percutaneous Endoscopic Gastrostomy (PEG) Tube, endoscopy, videofluoroscopy, dysphagia diet levels.

Activity 15. Discuss your findings with the class. Compare terms usage in SLP and medical contexts.

Activity 16. Reflect on the importance of using professional terminology correctly in clinical practice and research within the field of dysphagia management.

Unit 30. Holistic Approach to Dysarthria Assessment

Activity 1. Work in groups. Discuss the questions.

1. What are the causes of dysarthria? How might they impact the different speech subsystems?
2. How can speech-language pathologists assess and manage dysarthria in patients?

Activity 2. Categorise terms related to dysarthria according to their meaning.

Flaccid dysarthria, prosody, spastic dysarthria, unilateral upper motor neuron dysarthria, resonance, hyperkinetic dysarthria, FDA II, hypokinetic dysarthria, ataxic dysarthria, phonation, Dysarthria Examination Battery, Mayo Clinic Informal Protocol (Duffy), articulation, respiration, oral mechanism/cranial nerve examination, speech intelligibility observations, Mayo Clinic System for Differential Diagnosis of Dysarthria, DDK rates, perceptual speech assessment.

Domains of speech	Standardised assessment	Non-standardised assessment	Types of dysarthria	Clinical evaluation

Activity 3. Watch the video “What Is Dysarthria and How to Manage It? Ways to Assess Dysarthria.”⁶ What key aspects of dysarthria does a medical SLP need to consider when assessing this motor speech disorder?



⁶ URL: <https://www.youtube.com/watch?v=y-CU-t6dbw0&t=227s> (Accessed 02.05.2024, 09.00h).

Activity 4. Work in pairs. Compare your ideas and discuss.

1. What are the main challenges dysarthria patients face?
2. How do restorative and compensatory treatment approaches differ in dysarthria management

Activity 5. Watch the video again and choose two letters A-E that the speaker mentions about dysarthria assessment and treatment approaches.

SLPs use various assessment methods for diagnosing dysarthria, including...

- A. Standardised protocols like FDA II and dysarthria examination battery.
- B. Relying solely on informal assessments without standardised tests.
- C. Combining formal assessments with informal measures to gather comprehensive data.
- D. Ignoring informal observations and only using formal assessments.
- E. Using patient self-reports as the primary source of diagnostic information.

Effective treatment approaches for dysarthria focus on...

- A. Improving the patient's overall health rather than speech-specific issues.
- B. Addressing the most impactful area of speech production to enhance intelligibility.
- C. Incorporating non-speech oral motor exercises extensively.
- D. Employing both restorative and compensatory strategies adapted to the patient's needs.
- E. Avoiding any form of augmentative or alternative communication methods.

Effective strategies for assessing dysarthria include...

- A. Combining formal assessments with informal measures to gather comprehensive data.
- B. Relying solely on patient self-reports without standardised tests.
- C. Ignoring clinical observations and only using formal assessments.
- D. Using only informal assessments without any standardised protocols.

E. Implementing a blend of formal protocols like FDA II and informal observations.

Activity 6. Complete the table, using one word in each gap.

Types of dysarthria	Description	Symptoms	Treatment focus
Flaccid dysarthria	Weakness in speech muscles due to motor neuron damage	Breathy voice, imprecise (1) _____	Increase muscle (2) _____
Spastic dysarthria	Increased muscle tone leading to stiffness	Strained voice, slow (3) _____ rates	Reduce (4) _____ tone
Hypokinetic dysarthria	Reduced movement often associated with (5) _____	Reduced (6) _____, flat pitch	Improve (7) _____ and volume
Hyperkinetic dysarthria	Involuntary movements affecting speech	Irregular articulatory (8) _____	Manage involuntary (9) _____
Ataxic dysarthria	Coordination issues due to cerebellar damage	Slurred speech, scanning (10) _____	Enhance (11) _____
Unilateral upper motor neuron dysarthria	Damage to one side of the upper motor neurons	Unilateral facial (12) _____, harsh voice	Improve (13) _____ control

Activity 7. Discuss in groups.

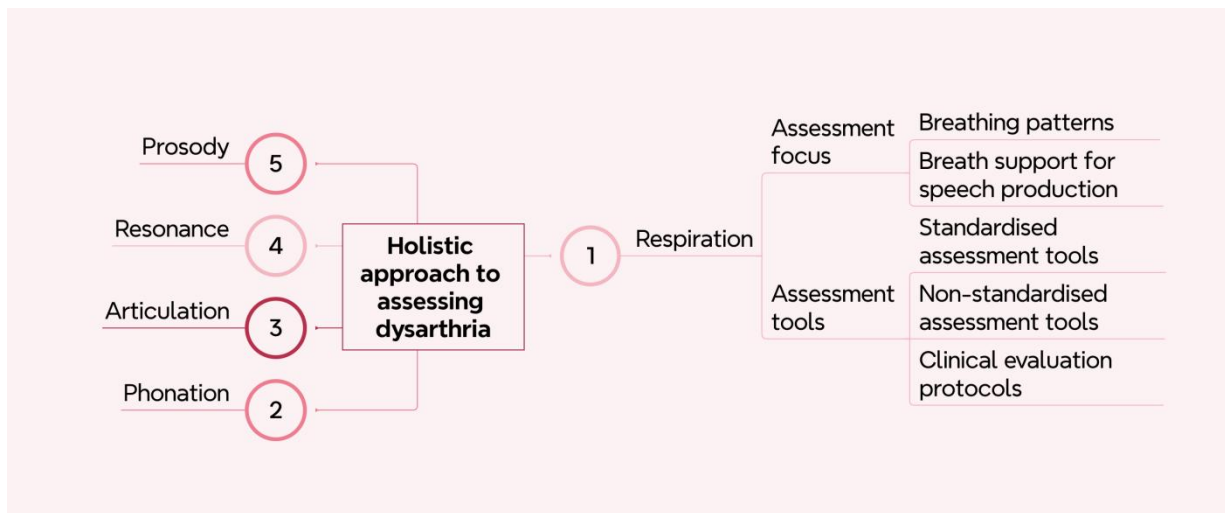
1. Discuss the neurological and physical causes of dysarthria and their impact on various speech components.
2. Explore the benefits and limitations of formal standardised tests and informal evaluation.

3. Discuss the objectives of dysarthria therapy and the different methods used to achieve these goals.
4. Analyse the importance of identifying dysarthria types for effective treatment.
5. Discuss strategies for involving patients and families in the therapy process and improving communication outcomes.

Activity 8. Use reliable sources such as ASHA and scholarly articles to find definitions and explanations for each term related to dysarthria diagnostics. Complete the table.

Term	Definition	Source
Flaccid dysarthria	associated with disorders affecting the lower motor neuron pathways and motor units	ASHA
Diadochokinetic (DDK) rates		
Speech intelligibility test		
Perceptual speech assessment		
Technology-based assessment of phoneme intelligibility		
FDA II		
Oral mechanism/cranial nerve examination		
Dysarthria examination battery		
Mayo clinic system for differential diagnosis of dysarthria		
Acoustic analysis		

Activity 9. Work in groups. Choose one aspect related to assessing dysarthria and research it in depth. Expand the mind map given below.



Activity 10. Prepare a presentation on your research into the holistic approach to assessing dysarthria in adults. Include definitions, examples, and real-world applications of the assessment practices.

Activity 11. Discuss in groups.

1. Discuss the benefits and challenges of integrating a holistic assessment strategy in clinical practice. Consider factors such as time constraints, resource availability, and interdisciplinary collaboration.

2. Explore how cultural differences and healthcare infrastructure might influence the implementation of these strategies. Discuss specific adaptations that might be necessary for effective assessment in Russian clinical settings.

Activity 12. Reflect on how the concepts and techniques learned in this unit can enhance your diagnostic skills.

Unit 31. Advanced Instrumentation in Resonance Disorders Assessment

Activity 1. Discuss in groups.

1. Why is it essential for SLPs to develop comprehensive assessment and intervention plans for patients with hypernasality?
2. What role does evidence-based practice play in developing assessment and intervention plans in SLP?

Activity 2. Read the assessment and intervention plan for a patient with a resonance disorder and identify the core problem discussed in it.

Assessment and Intervention Plan for a Patient with Reduced Nasality in Speech

Patient Information

Name	Tom
Age	12 years old
Background	A history of adenoidectomy and concerns about his speech sounding “stuffy.”

Assessment Plan

Case history and interview:

1. Gather information about Tom’s medical history, including any surgeries or health conditions.
2. Interview Tom and his family to understand their concerns and perceptions about his speech.

Oral mechanism examination:

Perform a thorough examination of Tom’s oral structures, including the velum, to assess for any anatomical abnormalities
--

Nasalance assessment:

1. Administer a nasalance assessment using a nasometer.
2. Record nasalance scores during oral and nasal sound production.

Speech sample collection:

- | |
|--|
| 1. Record a speech sample of Tom reading a standardised passage. |
| 2. Analyse the speech sample for signs of hyponasality. |

Instrumental assessment:

If the assessment results are inconclusive, perform an instrumental assessment to visualise velopharyngeal function.
--

Overall assessment findings:

Based on the assessment results, Tom presents with symptoms consistent with hyponasality, which is characterised by a lack of appropriate nasal resonance during speech, resulting in a “stuffy” or “blocked” quality to the voice.

Intervention Plan

Treatment goals:

1. Improve Tom’s nasalance scores within the typical range for his age.
2. Increase Tom’s awareness of the difference between oral and nasal resonance.
3. Enhance Tom’s overall speech intelligibility and reduce the perception of “stuffy” speech.

Intervention strategies:

1. Nasalance training (30-minute sessions, 2 times a week):
 - a) conduct therapy sessions focusing on improving nasalance control;
 - b) use visual feedback techniques to help Tom recognise and adjust nasal resonance;
 - c) practice with minimal pairs contrasting oral and nasal sounds.
2. Auditory discrimination (15-minute sessions, daily):
 - a) engage Tom in activities to improve his ability to discriminate between oral and nasal sounds;
 - b) Provide feedback and reinforcement for correct discrimination.
3. Speech exercises (15-minute sessions, daily):

- a) assign speech exercises targeting the accurate production of nasal and oral sounds;
- b) use mirror feedback to help Tom monitor his articulation.
4. Family involvement:
 - a) educate Tom's family about hyponasality and the importance of practising therapy exercises at home;
 - b) encourage regular practice and reinforcement of therapy techniques in everyday conversations.
5. Progress monitoring (monthly):
 - a) regularly assess Tom's nasalance scores to track progress;
 - b) adjust intervention strategies based on his performance and feedback from the family.
6. Collaboration with school:
 - a) collaborate with Tom's school-based SLP to ensure consistency in intervention across settings.

Designed based on: Sinko K., Gruber M., Jagsch R., Roesner I. et al. Assessment of nasalance and nasality in patients with a repaired cleft palate. Eur Arch Otorhinolaryngol. 2017. № 274 (7). Pp. 2845-2854; American Speech-Language-Hearing Association. Resonance disorders. URL: <https://www.asha.org/practice-portal/clinical-topics/resonance-disorders/> (Accessed 03.05.2024, 14:00h); Roth J. Speech Therapy Treatment Plan. The Adult Speech Therapy Workbook. URL: <https://theadultspeechtherapyworkbook.com/speech-therapy-treatment-plan/> (Accessed 03.05.2024, 13.45h).

Activity 3. Analyse how effectively this plan addresses Tom's resonance disorder. Discuss in pairs.

1. What were the key components of Tom's case history?
2. How did the nasalance assessment results indicate the presence of hyponasality in Tom's speech?
3. What specific findings were observed during the oral mechanism examination? Why is this examination essential in assessing resonance disorders?
4. Based on the speech sample analysis, what characteristics of hyponasality were identified in Tom's speech?
5. What are the overall assessment findings?

6. How do assessment results guide the development of specific intervention goals and strategies for the patient?

Activity 4. Analyse the layout of the assessment and intervention plan. Discuss in pairs.

1. What are the key sections of this assessment and intervention plan, and how are they organised within the protocol document?

2. How do the protocols introduce and provide background information about the patient?

3. What visual elements or formatting features are used in the protocol to enhance readability and clarity of information?

4. Are there clear headings, subheadings, or labels that help students navigate different sections of the protocol? How do these aid in comprehension?

5. How is the protocol structured to present assessment results and intervention strategies in a logical sequence?

6. Does the layout facilitate a step-by-step understanding of the assessment process and treatment planning?

Activity 5. Examine the following phrases from the plan and explain their meanings and implications.

1. A history of adenoidectomy and concerns about his speech sounding “stuffy.”

2. Gather information about Tom’s medical history, including any surgeries or health conditions.

3. Perform a thorough examination of Tom’s oral structures, including the velum, to assess for any anatomical abnormalities.

4. Administer a nasalance assessment using a nasometer.

5. Record nasalance scores during oral and nasal sound production.

6. Analyse the speech sample for signs of hyponasality.

7. If the assessment results are inconclusive, perform an instrumental assessment to visualise velopharyngeal function.

8. Based on the assessment results, Tom presents with symptoms consistent with hyponasality, which is characterised by a lack of appropriate nasal resonance during speech, resulting in a “stuffy” or “blocked” quality to the voice.

9. Engage Tom in activities to improve his ability to discriminate between oral and nasal sounds.

10. Adjust intervention strategies based on his performance and family feedback.

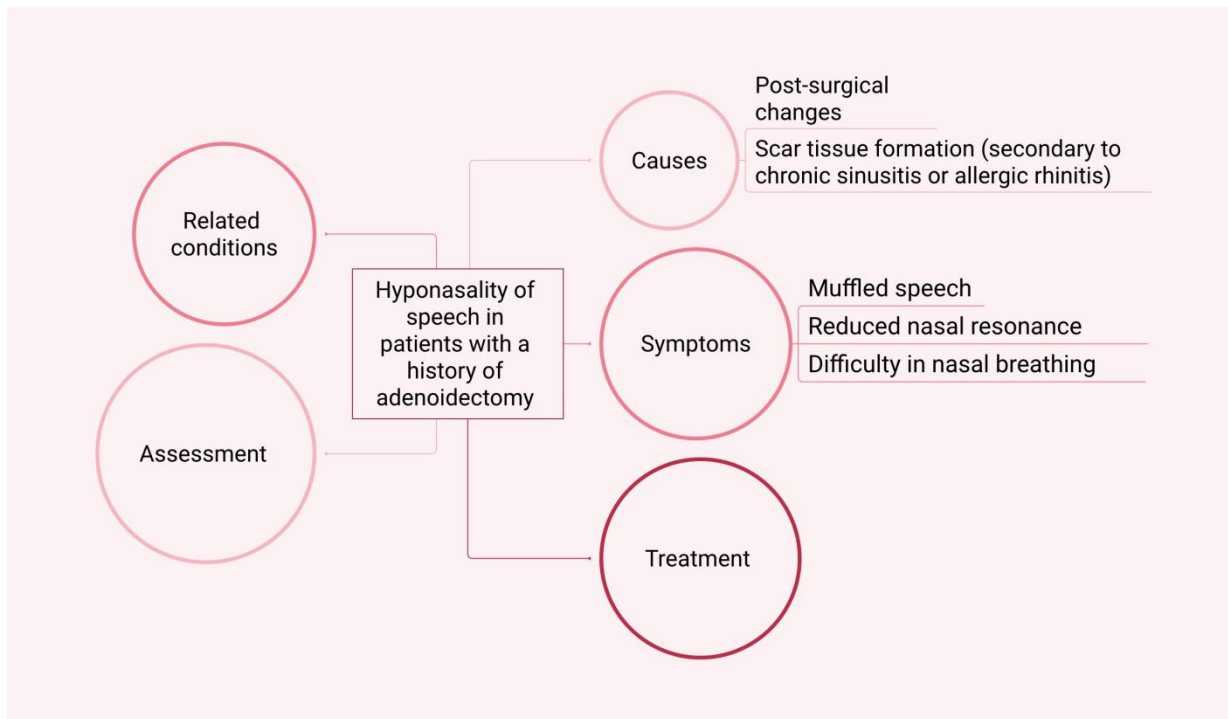
Activity 6. Using the Corpus of Contemporary American English (COCA), explore the frequency, collocations, and contextual usage of the following phrases related to the assessment and intervention plan for a patient with hypernasality in speech. Complete the table with your findings.

Phrase	Discipline	Collocations	Frequency	Contextual usage
hyponasality in speech				
nasal resonance during speech				
velopharyngeal dysfunction				
production of oral and nasal sounds				
minimal pairs contrasting				
nasalance control				

Activity 7. Work in groups. Brainstorm terms related to hyponasality of speech in patients with a history of adenoidectomy. Discuss how terms relate to each other. Use arrows or lines to show connections:

e.g., adenoidectomy → reduces → nasal obstruction

Activity 8. Work in groups. Organise your ideas and expand the mind map below.



Activity 9. Work in groups. Use reliable resources to research the different causes of hypernasality in paediatric patients. Focus on understanding the underlying mechanisms and specific conditions that lead to hypernasality and advanced instruments that are used for its assessment.

Activity 10. Prepare a brief presentation of your research findings. Highlight key causes and their implications for instrumental assessment and treatment.

Activity 11. Write an assessment and intervention plan for a patient with hypernasality, with a focus on utilising advanced instrumentation in SLP.

Patient Information

Patient's name: John Smith

Age: 8 years

Medical history: no significant medical history, except for recurrent upper respiratory infections.

Chief complaint: parents report that John's speech sounds are "nasal" and unclear.

Your assessment plan should include:

1. Assessment goals
2. Assessment procedures (e.g., case history, examinations, instrumental assessments, etc.)
3. Assessment results

Your intervention plan should include:

1. Intervention goals
2. Intervention strategies
3. Progress monitoring
4. Expected outcomes

Activity 12. Work in groups. Share and review your assessment and treatment plans for a patient with hypernasality.

Unit 32. Technology Integration in Modern Assessment Practices

Activity 1. Discuss in pairs.

1. What is the role of technology in speech-language pathology and assessment practices?
2. Can you think of specific challenges or opportunities that arise when integrating technology into assessment processes for speech and language disorders?

Activity 2. Read the description of the Language Video Assessment Tool. What are its primary features and benefits?

The Language Video Assessment Tool (VAT) is an advanced, norm-referenced language testing battery designed for children and young adults aged 5 to 21 years. It comprises four stand-alone tests that provide comprehensive and reliable assessments of language comprehension, expressive language skills, and morphological and syntactic abilities.

The VAT is a cutting-edge tool that accurately evaluates various aspects of language. It is composed of the following tests:

- *language comprehension in context*
- *restating information*
- *following directions*
- *morphology and sentence structure*

These tests are normed on a nationally representative sample of 1,554 typically developing children and young adults in the United States, ensuring robust and valid results.

Key Features

Comprehensive Language Assessment

The VAT is designed to cover critical areas of language development:

1. Measures understanding of spoken language within various contexts.
2. Assesses the ability to accurately restate information heard.
3. Evaluates the capacity to comprehend and follow spoken directions.
4. Tests knowledge and application of grammatical rules.

Validated for Telepractice

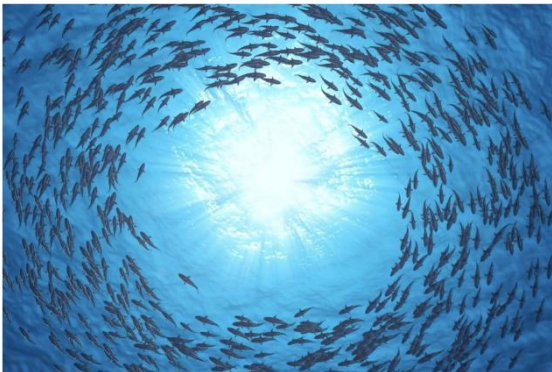
In today's digital age, VAT stands out for being validated for telepractice. This feature ensures that assessments can be conducted remotely without compromising accuracy or reliability. It is particularly beneficial for:

- *remote assessments*: facilitating evaluations for clients who cannot visit the clinic.
- *telehealth integration*: seamlessly integrating into telehealth platforms for comprehensive remote care.

Video-Based format

One of VAT's most attractive aspects is its video-based format. Questions are presented through videos, which helps in maintaining the interest and focus of young examinees. This format leverages both visual and auditory stimuli, providing a dynamic assessment environment.

sample video of this test



sample video of this test



Automated Scoring

Efficiency is paramount in clinical settings, and the VAT addresses this with its automated scoring system. This system offers:

- *immediate results*: quickly processed scores allow for timely intervention planning.
- *standard scores and percentiles*: detailed scoring that includes standard scores, percentile ranks, and clinical significance indicators.

Psychometric Strengths

The VAT's normative data are derived from a diverse sample that mirrors the most recent U.S. Census data on gender, race/ethnicity, and region. This ensures that the test is reliable and valid across different demographics.

Administration and Format

The VAT is administered online, taking approximately 45-60 minutes to complete all four tests. This online format, coupled with digital protocols, enhances accessibility and convenience for both practitioners and clients.

Clinical and Educational Applications

The VAT is versatile, serving a wide range of applications in both clinical and educational settings:

- *clinical use*: essential for diagnosing and monitoring language disorders, and for developing tailored intervention plans.
- *educational use*: valuable for identifying students who need language support and informing individualised education plans (IEPs).

Testimonials and Case Studies

Clinicians who have used the VAT report significant improvements in their ability to assess and address language issues. Case studies highlight successful assessments that lead to effective interventions, demonstrating the VAT's impact in real-world scenarios.

The Language Video Assessment Tool represents a significant advancement in the field of speech-language pathology. Its comprehensive, validated, and user-friendly approach makes it an indispensable resource for professionals aiming to provide accurate and effective language assessments.

Compiled from: Video Assessment Tools. Language Video Assessment Tool (Language VAT). URL: <https://videoassessmenttools.com/language-video-assessment-tool-language-vat/> (Accessed 10.05.2024, 12:00h).

Activity 3. Discuss in groups.

1. What are the benefits and potential challenges of using video-based questions in assessments for children and young adults?
2. How is VAT validated for telepractice?
3. Why is this feature particularly important in today's healthcare environment?
4. What are the key areas of language development assessed by the VAT?
5. How does automated VAT scoring improve the assessment process compared to traditional scoring methods?
6. What role does the normative data play in the reliability and validity of the VAT? How does it ensure accurate assessment across different demographics?

Activity 4. Collaborative project. Develop a proposal of advanced technologies for assessing speech and language disorders.

You are a team of speech-language pathologists taking part in an international project aimed at advancing assessment technologies in the field of speech and language pathology. This project will culminate in a round table event where you will present your proposals to a panel of experts. Your goal is to design a practical technology proposal that addresses specific needs in the field of SLP, with the ultimate aim of securing funding for its development.

Guidelines:

1. Select a specific aspect of speech and language assessment (e.g., articulation, fluency, voice, language comprehension, expressive language, phonology).
2. Investigate current technologies used in your chosen area and identify existing gaps.
3. Explore innovative solutions or emerging technologies that could address these gaps.
4. Develop a proposal for a new technology or an enhancement to an existing technology. Include the following sections.

Your proposal should include:

1. Description of the proposed technology.
2. Specific problems the technology aims to solve.
3. Detailed explanation of how the technology works.
4. Description of the technology's primary users.
5. The steps for developing and implementing the technology, including a timeline.
6. The advantages over existing technologies.
7. Potential obstacles and strategies to overcome them.
8. Estimated cost for development and implementation.

Activity 5. Design a presentation that covers all aspects of your proposal and fund-raising strategy. Use visual aids (slides, diagrams and prototypes). Present your proposal at a round table event.

Activity 6. Arrange the following phrases for conducting technology-based paediatric and geriatric assessment interviews according to their function. Add more examples to the table.

1. Could you please tell me more about your speech concerns as we proceed with this online assessment?
2. I can see you're working hard, and that's excellent.
3. Your test results show that there are some areas we need to work on, but you've made great progress.
4. We'll now proceed with a video-based comprehension test to assess your understanding.
5. During our video assessment, I'm noting that you exhibit mild hypernasality in your speech.
6. I will record this part of our session to analyse your speech patterns more closely later.
7. Can you provide an example of when you've noticed these speech issues?
8. We might try using some teletherapy tools to support your practice between sessions.
9. Could you explain what happens when you experience these speech issues?
10. I recommend starting with some home-based practice activities that I will provide.
11. It's okay to feel anxious about this process. We will take it step by step.
12. If you're concerned about the technology, I'm here to help guide you through it.
13. We will set small, achievable goals to help you progress steadily.
14. Thank you for your participation. We will review the results and discuss a treatment plan during our next session.

Functions	Phrases
Eliciting patient information	
Providing feedback	

Functions	Phrases
Explaining assessment procedures	
Offering encouragement	
Recording observations	
Clarifying	
Suggesting intervention options	
Addressing patient concerns	
Setting expectations	

Activity 7. Prepare for the role-play according to the guidelines in your role-play card.

Scenario 1

Cathy is 7 years old. Cathy's mother has brought her to the speech clinic due to concerns about her speech and language development. Cathy is a bit shy and may need some reassurance. SLP is going to conduct an initial assessment and give recommendations to the child's mother.

Role card 1	Role card 2	Role card 3
<p>Role: SLP Goal: assess Cathy's speech and language development using age-appropriate technology-assisted tools. Establish rapport with the girl and her parents. Provide feedback and recommendations to Cathy's parents based</p>	<p>Role: Cathy Goal: respond to the SLP's questions and tasks as best as you can. Answer questions about your speech experiences at home and school.</p>	<p>Role: Mrs Smith, Cathy's mother Goal: provide detailed information about Cathy's speech and language development. Answer the SLP's questions regarding Cathy's behaviour, communication at home, and school performance. Listen to the SLP's</p>

on your assessment.		recommendations and ask any questions you have.
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Scenario 2

Mr James, 78, has been referred to the speech clinic for an assessment of his speech and communication abilities. He is experiencing mild hearing loss and has some difficulty articulating words clearly.

Role card 1	Role card 2
<p>Role: SLP Goal: conduct a thorough assessment to identify specific speech and hearing issues. Speak clearly, slowly, and possibly louder to aid Mr James’s understanding. Offer practical suggestions to address the identified issues and improve his overall communication.</p>	<p>Role: Mr James Goal: describe the difficulties you have been experiencing with your speech. Respond to the SLP’s questions and tasks, indicating any issues with hearing or understanding. Provide examples of when and how you experience communication difficulties.</p>

Activity 8. Role-play technology-based interviews. Use the phrases.

Activity 9. Discuss in groups.

1. How does the integration of technology in speech and language assessments enhance the accuracy of diagnosing speech and language disorders?
2. What are the potential challenges and limitations of using technology in speech and language assessments?
3. How can speech-language pathologists ensure that technology-based assessments are adapted to a patient’s individual needs?

Activity 10. Reflect on your interactions with paediatric and geriatric patients in the role-play. How did you adapt your approach to meet the needs of different age groups?

REFERENCES

1. Akafi E., Vali M., Moradi N., Baghban K. Assessment of hypernasality for children with cleft palate based on cepstrum analysis. *J Med Signals Sens.* 2013. № 3 (4). Pp. 209–215.
2. Allison K.M., Russell M., Hustad K.C. Reliability of Perceptual Judgments of Phonetic Accuracy and Hypernasality Among Speech-Language Pathologists for Children With Dysarthria. *Am J Speech Lang Pathol.* 2021. № 30 (3S). Pp. 1558–1571.
3. Icht M., Bergerzon-Bitton O., Ben-David B.M. Validation and cross-linguistic adaptation of the Frenchay Dysarthria Assessment (FDA-2) speech intelligibility tests: Hebrew version. *Int J Lang Commun Disord.* 2022. № 57 (5). Pp. 1023–1049.
4. Lim H.J., Lai D.K., So B.P., Yip C.C. et al. A Comprehensive Assessment Protocol for Swallowing (CAPS): Paving the Way towards Computer-Aided Dysphagia Screening. *Int J Environ Res Public Health.* 2023. № 20 (4). P. 9.
5. Mathad V.C., Scherer N., Chapman K., Liss J.M. et al. Deep Learning Algorithm for Objective Assessment of Hypernasality in Children With Cleft Palate. *IEEE Trans Biomed Eng.* 2021. № 68 (10). Pp. 2986–2996.
6. Saz O., Yin S., Lleida E., William R. et al. Tools and Technologies for Computer-Aided Speech and Language Therapy. *Speech Communication.* 2009. № 51. Pp. 948–967.
7. Simmons K.C., Mayo R. The use of the Mayo Clinic system for differential diagnosis of dysarthria. *J Commun Disord.* 1997. № 30 (2). Pp. 117–131.
8. Stelck E.H., Boliek C.A., Hagler P.H., Rieger J.M. Current practices for evaluation of resonance disorders in North America. *Semin Speech Lang.* 2011. № 32 (1). Pp. 58–68.
9. Usha G.P., Alex J.S.R. Speech assessment tool methods for speech impaired children: a systematic literature review on the state-of-the-art in Speech impairment analysis. *Multimed Tools Appl.* 2023. Pp. 1–38.

10. Van Lierde K.M., Wuyts F.L., Bonte K., Van Cauwenberge P. The nasality severity index: an objective measure of hypernasality based on a multiparameter approach. A pilot study. *Folia Phoniatr Logop.* 2007. № 59 (1). Pp. 31–38.

11. Van Nuffelen G., Middag C., De Bodt M., & Martens J. Speech technology-based assessment of phoneme intelligibility in dysarthria. *International Journal of Language & Communication Disorders.* 2009. № 44 (5). Pp. 716–730.

12. Virvidaki I.E., Nasios G., Kosmidou M., Giannopoulos S. et al. Swallowing and Aspiration Risk: A Critical Review of Non-Instrumental Bedside Screening Tests. *J Clin Neurol.* 2018. № 14 (3). Pp. 265–274.

13. Wannberg P., Schalling E., Hartelius L. Perceptual assessment of dysarthria: Comparison of a general and a detailed assessment protocol. *Logoped Phoniatr Vocol.* 2016. № 41 (4). Pp. 159–167.

Online sources

1. American Speech-Language-Hearing Association. Dysarthria in Adults. URL: <https://www.asha.org/practice-portal/clinical-topics/dysarthria-in-adults/> (Accessed 13.05.2024, 13:00h).

2. American Speech-Language-Hearing Association. Resonance disorders. URL: <https://www.asha.org/practice-portal/clinical-topics/resonance-disorders/> (Accessed 13.05.2024, 12:00h).

3. SLCN. Transforming communication: The role of technology in speech therapy. URL: <https://slcn.com.au/transforming-communication-the-role-of-technology-in-speech-therapy/> (Accessed 14.05.2024, 14:15h).

GLOSSARY

AAMD – American Association of Mental Deficiency.

Abduction – a drawing away from the midline of the body or a moving away from each other, e.g., he has two vocal folds.

Ability Test – a test designed to measure maximum performance that reveals the present level of functioning, e.g., a test of motor ability.

Acquired Communication Disorder – a problem with speech, language, voice, pragmatics, or fluency that develops after a person has developed language. Contrasted with a *developmental* communication disorder. Typically refers to aphasia, dysarthria, apraxia of speech, cognitive-communication disorders that occur after an acquired brain injury.

Augmentative and Alternative Communication (AAC) – all forms of communication (other than oral speech) that are used to express thoughts, needs, wants, and ideas. This includes facial expressions, gestures, symbols, pictures, writing, and speech-generating devices.

Adduction – a drawing toward the middle of the body or a bringing toward each other, e.g., the two vocal folds.

Attention Deficit Hyperactivity Disorder (ADHD) – a condition that affects people's behaviour. People with ADHD can seem restless, may have trouble concentrating and may act on impulse.

Advanced Instrumentation – use of sophisticated tools and technology to assess and diagnose speech and language disorders.

Agnosia – inability to recognise or attach meaning to sensory information, although the physiologic receptor mechanism is intact. Usually associated with a central nervous system disorder.

Alexia – the inability to read or understand written words, typically caused by brain damage.

Alveolar – a class of sounds made when the tongue touches or is close to the bumpy front part of the roof of the mouth, called the alveolar ridge. English alveolar consonants include /n, t, d, s, z, ch, l, r/.

Alzheimer’s Disease – the most common type of dementia, often recognised by declining short-term memory in the early stages. Like all dementias, people with Alzheimer’s get worse over time as it is a degenerative condition.

Amyotrophic Lateral Sclerosis (ALS) – a progressive neurodegenerative disease that affects nerve cells in the brain and spinal cord, leading to loss of muscle control and speech difficulties.

Aphasia – an acquired language disorder caused by damage to the language centres of the brain. Aphasia can impact auditory comprehension, verbal expression, reading, writing, and use of symbols. It does not affect intelligence.

Apraxia of Speech (AOS) – an acquired motor speech disorder that impairs the ability to form and execute the motor plans for speech.

Articulation – the movement of the tongue, lips, and jaw to make speech sounds. Articulation is one part of the whole speech process that includes respiration, phonation, articulation, resonance, and prosody. Articulation problems are common after a stroke or brain injury as part of dysarthria.

Articulation Disorder – a type of speech disorder where a person has difficulty pronouncing certain sounds.

Articulators – organs of the speech mechanism which produce meaningful sound by interrupting the flow of exhaled air or by narrowing the space for its passage; i.e. lips, lower jaw, velum, tongue, and pharynx. Some authorities include the cheeks, hyoid bone, larynx, uvula, alveolar ridge, nose, teeth, and sinuses.

Autism Spectrum Disorder (ASD) – a developmental disorder that affects communication and behaviour, often characterised by difficulties in social interaction and communication.

ASHA – the American Speech-Language-Hearing Association is the organisation that certifies Speech-Language Pathologists in the United States. The annual ASHA convention is held every year in November in various locations around the country, featuring continuing education and an exhibit hall for 10,000–14,000 attending speech pathologists, audiologists, and students.

Assessment – the evaluation phase of therapy in which a speech therapist determines whether an impairment exists, the degree and nature of the impairment, and sets the direction for therapy, usually with a written report summarising the findings. Assessments may include formal or standardised tests or may be informal, consisting of an interview or a variety of non-standardised tasks. Many assessments include a combination of formal and informal measures.

Ataxic Dysarthria – dysarthria associated with cerebellar damage, affecting coordination.

Auditory Comprehension – understanding words through listening. Auditory comprehension is often impaired in aphasia. It can be relatively intact for single words or simple sentences, but impaired for complex sentences, grammatical words, or when there are background distractions.

Auditory Processing Disorder (APD) – a condition in which the brain has difficulty processing and interpreting auditory information. Individuals with APD typically have normal hearing but struggle to understand and make sense of sounds, especially in noisy environments.

Auditory Rehabilitation Therapy (ART) – a type of therapy designed to help individuals with hearing loss develop or regain listening skills and improve communication abilities.

Augmentative and Alternative Communication (AAC) – communication methods used by a person with a communication disorder to enhance or replace spoken or written communication. AAC can be *unaided* or *aided* by a device or communication tool. AAC can be *low-tech* (paper or equivalent) or *high-tech* (computer, smartphone, or dedicated device).

Babbling – prelinguistic verbal conduct of infants during the second half of the first year of life.

Beery-Buktenica Developmental Test of Visual-Motor Integration (VMI) assesses the integration of visual and motor skills. It involves copying geometric shapes to evaluate how well the visual and motor systems coordinate.

Blends – see *consonant clusters*

Broca's Aphasia – primarily an expressive language impairment, meaning it mostly affects speaking and writing – the two ways we produce, or express, language. Comprehension of language remains relatively intact in Broca's aphasia, while repetition of words and sentences is usually poor. People with Broca's aphasia are often very aware of their difficulties, and that can lead to high levels of frustration and sometimes depression.

Caregiver – a person who provides care for a person with a disability. A caregiver can be a spouse, sibling, parent, or friend and a paid caregiver hired to care for a person. Also called a carer or care partner.

Clinical Evaluation of Language Fundamentals, Fifth Edition (CELF-5) is a standardised assessment tool used by speech-language pathologists to evaluate a child's expressive and receptive language skills. It includes a battery of tests to assess various aspects of language, such as semantics, morphology, syntax, and pragmatics.

Central Auditory Processing Disorder (CAPD) – a breakdown of auditory information processing in the central nervous system, despite normal peripheral hearing. It affects the brain's ability to process or interpret auditory information effectively, leading to difficulties in understanding speech, especially in challenging listening environments.

Central Nervous System – the part of the nervous system consisting of the brain and spinal cord.

Cerebral Palsy – a group of disorders that affect movement and muscle tone or posture, caused by damage that occurs to the immature brain as it develops, most often before birth.

Certificate of Clinical Competence in Speech-Language Pathology (CCC-SLP) – a nationally recognised professional credential that represents a level of excellence in the field of Speech-Language Pathology.

Childhood Apraxia of Speech (CAS) – is a neurological childhood (paediatric) speech sound disorder in which the precision and consistency of movements underlying speech are impaired in the absence of neuromuscular deficits (e.g. abnormal reflexes, abnormal tone).

Clinical Expertise – the knowledge and skills that clinicians acquire through training and practice in the field of speech-language pathology.

Clinical Fellowship Year (CFY) – a supervised postgraduate professional experience required for speech-language pathologists to obtain their Certificate of Clinical Competence (CCC-SLP).

Clinical Swallowing Examination (CSE) – a bedside evaluation that includes a comprehensive history, physical examination, and observation of swallowing with different consistencies of food and liquid. It helps identify signs and symptoms of dysphagia and the need for further instrumental assessment.

Cognition – the mental processes related to knowledge, including awareness, attention, perception, reasoning, memory, language, and judgement.

Cognitive Behavioural Therapy (CBT) – a form of psychological treatment that has been demonstrated to be effective for a range of problems including depression, anxiety disorders, alcohol and drug use problems, marital problems, eating disorders, and severe mental illness. CBT is based on several core principles, including that psychological problems are based, in part, on faulty or unhelpful ways of thinking and on learned patterns of unhelpful behaviour.

Communication – the transmission of a message from a sender to a recipient through a medium (e.g. verbal, non-verbal, written).

Communication Disorder – any disorder that impairs communication. Communication disorders may affect speech (speech-sound disorder, articulation disorder, motor speech disorder, apraxia of speech), language (aphasia, expressive language disorder), pragmatics (autism, frontal head injury), fluency

(stuttering), literacy (dyslexia, agraphia, alexia), cognition (dyscalculia, dementia), or voice.

Comorbid Conditions – the presence of one or more additional conditions co-occurring with a primary condition.

Conners Comprehensive Behaviour Rating Scales (CBRS) – a tool used to assess a wide range of behavioural, emotional, and social issues in children and adolescents. It is used in various settings, such as schools and clinics, to support diagnosis and guide intervention for conditions like ADHD.

Consonant – a speech sound in which the air is partially obstructed. Consonants combine with vowels to make syllables or with other consonants to form clusters.

Consonant Cluster – two or more consonant sounds appearing next to each other with no vowel separation.

Conversation - the exchange of ideas through language. The end goal of speech therapy in many cases.

Co-occurring Conditions – co-occurring disorder refers to having a co-existing mental illness and substance use disorder. While commonly used to refer to the combination of substance use and mental disorders, the term can also refer to other combinations of disorders, such as a mental disorder and an intellectual disability.

Coping Strategies – techniques and methods that individuals use to manage stress, adapt to challenges, and maintain emotional well-being. In the context of speech and language difficulties, coping strategies can include seeking support from speech-language therapists, using communication aids, and practising relaxation techniques.

Craniofacial Conditions, including **cleft lip** and **palate**, – congenital structural anomalies caused by atypical embryological development.

Cyclic Schedule – a therapy approach where different speech or language targets are addressed in rotation over a period of time, allowing for distributed practice across multiple skills.

Diadochokinetic (DDK) Rates – a measure of how quickly and accurately a person can produce rapid, alternating movements with their speech muscles. DDK rates are often used to assess the functionality and coordination of the speech musculature and are useful in diagnosing motor speech disorders, such as dysarthria and apraxia of speech.

Degenerative Disease – a medical condition that gets worse, or progresses, over time. Often speech therapy for people with degenerative disorders will focus on teaching strategies that can be used by the person or family as skills deteriorate. Dementia, Parkinson's, ALS, cancer, and PPA are progressive conditions that can affect communication.

Dementia – an umbrella term for a set of degenerative brain disorders that often affect memory and thinking skills first, before impacting language, emotions, and motivation.

Developmental Coordination Disorder (DCD) – a motor skills disorder that affects coordination and the ability to perform daily activities.

Developmental Coordination Disorder Questionnaire (DCDQ) – a parent-report measure used to screen for coordination disorders in children aged 5 to 15 years. It assesses functional motor skills in various contexts.

Developmental Language Disorder (DLI) – a communication disorder that interferes with learning, understanding, and using language. These language difficulties are not explained by other conditions, such as hearing loss or autism, or by extenuating circumstances, such as lack of exposure to language.

Digital Therapeutics in SLP are evidence-based therapeutic interventions driven by high-quality software programs to prevent, manage, or treat speech and language disorders. These may include mobile apps or computer-based programs designed to support speech and language development.

DSM-5-TR – the standard classification of mental disorders used by mental health professionals in the United States.

Dysarthria – term for a collection of motor speech disorders due to impairment originating in the central or peripheral nervous system. Respiration, articulation, phonation, resonance, or prosody may be affected. Violation and automatic

actions, such as chewing and swallowing, and movements of the jaw and tongue may also be deviant. It excludes apraxia and functional or central language disorders.

Dysarthria Examination Battery (DEB) – assesses speech characteristics and the physiological bases of dysarthria.

Dyscalculia – a learning disability that affects the ability to understand and perform mathematical calculations.

Dysgraphia – a learning disability that affects writing abilities, including handwriting, typing, and spelling.

Dyslalia – 1. Articulatory disorder for which no physiologic cause can be determined. 2. Functional articulatory disorders.

Dyslexia – a learning disorder characterised by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities.

Dysphagia – difficulty in swallowing; may include inflammation, compression, paralysis, weakness, or hypertonicity of the oesophagus.

Dysphonia – the loss of the normal timbre of the voice due to a functional or organic disorder of the larynx.

Evidence-Based Practice (EBP) – an approach to clinical practice that values research and evidence of efficacy above tradition when making treatment decisions. Evidence exists along a hierarchy of strength, from clinical expertise and case studies to randomised controlled trials and meta-analyses.

Executive Functioning – the term for the overall management of tasks, including planning, reasoning, monitoring, adjusting, problem solving, and evaluating. This is the highest level of cognitive functioning and often impaired in brain injury survivors.

Expressive Aphasia – a type of aphasia characterised by effortful, non-fluent (fewer than 5 words per utterance), and agrammatic (omitting function words) speech with relatively good auditory comprehension. Syntax and grammar are often impaired for both verbal expression and auditory comprehension. Writing is

frequently more impacted than reading, though both are likely to be decreased from previous abilities.

Expressive Language Disorder – one in which the child struggles to get their meaning or messages across to other people.

Eye Gaze Technology – assistive technology that allows individuals to control a computer, tablet, or other electronic devices using their eye movements. This technology uses an **eye-tracking device** to detect where the user is looking on the screen and translates those eye movements into commands, enabling users to interact with the device without the need for physical touch.

Family Educational Rights and Privacy Act (FERPA) – a federal law that protects the privacy of student education records. In SLP, it applies to educational institutions and governs the handling of student information, including speech and language assessments and interventions conducted in school settings.

Fiberoptic Endoscopic Evaluation of Swallowing (FEES) – procedure that involves the insertion of a flexible endoscope through the nose to visualise the pharynx and larynx during swallowing. It helps assess the presence of aspiration, residue, and the effectiveness of various swallowing manoeuvres.

Flaccid Dysarthria – a type of dysarthria characterised by weakness or reduced muscle tone.

Fluency of Speech – the flow and ease of speech output, which can be disrupted in aphasia, leading to halting, effortful speech, or excessive, nonsensical output.

Fluency Disorder – when you have a fluency disorder it means that you have trouble speaking in a fluid, or flowing, way. You may say the whole word or parts of the word more than once, or pause awkwardly between words. This is known as **stuttering**. You may speak fast and jam words together, or say “uh” often. This is called **cluttering**.

Foetal Alcohol Syndrome (FAS) – a congenital syndrome caused by excessive consumption of alcohol by the mother during pregnancy, characterised by retardation of mental development and of physical growth, particularly of the skull and face of the infant. Implications for speech and language include receptive and expressive language delays, speech disorders such as deficits in

fluency, voice, intonation, and articulation, and verbal learning and memory deficits.

Frenchay Dysarthria Assessment (FDA-2) – evaluates the severity and type of dysarthria.

Functional Behavioural Assessment (FBA) – a process for gathering information about behaviours of concern, whether the behaviours are academic, social or emotional.

Functional Phonological Disorder – a type of speech sound disorder where a child has difficulty using sounds correctly in words. This disorder is not due to any physical or neurological cause but rather involves problems with the mental representation of sounds and the rules for sound patterns in speech.

GFTA-3 (Goldman-Fristoe Test of Articulation - 3rd Edition) – a standardised assessment designed to evaluate speech sound production skills in children from ages 2 to 21 years 11 months. It measures the client's ability to produce consonant and vowel sounds across word positions and helps diagnose articulation and phonological disorders.

Global Development Delay – the term is used when a child takes longer to reach certain development milestones than other children their age.

Hearing Impairments – partial or total inability to hear, affecting communication and language development.

Health Insurance Portability and Accountability Act (HIPAA) – a federal law that sets national standards for the protection of individuals' medical records and other personal health information. In SLP, it governs the privacy and security of patient information in healthcare settings.

Hyperkinetic Dysarthria – characterised by abnormal involuntary movements affecting respiratory, phonatory, and articulatory structures impacting speech and deglutition.

Hypernasality – occurs when there is abnormal sound energy in the nasal cavity during production of voiced, oral sounds. Hypernasality is primarily a vowel phenomenon but can occur on other voiced sounds.

Hypokinetic Dysarthria – primarily associated with Parkinson’s disease, is characterised by symptoms like reduced vocal loudness, monotone speech, and imprecise articulation. These conditions lead to decreased speech intelligibility and challenges in communication.

Hyponasality – occurs when there is reduced nasal resonance or energy associated with nasal sounds, typically due to a blockage or an obstruction in the nasopharynx or nasal cavity or related to a neurological condition.

ICD-10 – International Classification of Diseases, Tenth Revision (ICD-10).

ICD-11 – International Classification of Diseases, Tenth Revision (ICD-11).

ICF – the WHO framework for measuring health and disability at both individual and population levels. It was officially endorsed by all 191 WHO Member States in the Fifty-fourth World Health Assembly on 22 May 2001.

Individuals with Disabilities Education Act (IDEA) – a federal law in the United States that ensures services to children with disabilities throughout the nation. IDEA governs how states and public agencies provide early intervention, special education, and related services to more than 8 million eligible infants, toddlers, children, and youth with disabilities.

Individualised Education Program (IEP) – a written document for each child with a disability that is developed, reviewed, and revised in accordance with the Individuals with Disabilities Education Act (IDEA). The IEP includes the special education and related services that are designed to meet the unique needs of the child and ensure their educational progress.

Informed Consent – the process of obtaining permission from a client or their legal representative before providing assessment or treatment, after fully explaining the nature, risks, and benefits of the proposed services.

Intervention – the strategies and therapies used to treat speech, language, and communication disorders.

Intonation – the rise and fall of pitch in the voice during speech. A component of **prosody**.

Kaufman Brief Intelligence Test - Second Edition (KBIT-2) – a brief measure of verbal and nonverbal intelligence used with individuals ages 4 through 90 years. It assesses cognitive abilities through verbal and nonverbal subtests.

Kaufman Speech Praxis Test (KSPT) – a norm-referenced assessment designed to identify and treat Childhood Apraxia of Speech. It evaluates a child’s ability to plan and execute oral movements for speech production.

Language-Based Learning Disorders – disorders that affect the ability to acquire, use, and understand language, impacting reading, writing, and spelling skills.

Language Comprehension – the ability to understand spoken or written language.

Language Delay – a condition where a child’s language development is significantly behind that of their peers. This can involve difficulties with understanding and using spoken language, including problems with vocabulary, sentence structure, and communication.

Language Intervention – techniques used to improve language skills in individuals with communication disorders.

Language Profiles – comprehensive descriptions of an individual’s language abilities, including strengths and weaknesses.

Least Restrictive Environment (LRE) – principle that requires students with disabilities to be educated with non-disabled peers to the maximum extent appropriate.

Morphology – the study of the structure and form of words in a language, including the use of prefixes, suffixes, and root words.

Morphosyntactic Deficits refer to difficulties in understanding and using the morphological and syntactic aspects of language. This includes problems with

word formation, grammatical structures, and sentence construction, which can affect both expressive and receptive language skills.

Motor Speech Disorder – a problem producing speech, typically a type of dysarthria or apraxia. Results from neurological, neuromuscular, or musculoskeletal problems with respiration, phonation, articulation, resonance, or prosody.

Movement Assessment Battery for Children (MABC) – a standardised test used to identify motor difficulties in children and adolescents aged 3 to 16 years. It assesses manual dexterity, aiming and catching, and balance.

Nasality – the quality of voice that results from the sound resonating in the nasal cavity. Excessive nasality can occur when the velopharyngeal mechanism fails to close the nasal passage during the production of non-nasal sounds, leading to hypernasal speech.

Nasalance – a measure of the acoustic correlate of nasality, typically quantified using a nasometer. It represents the ratio of nasal acoustic energy to the total acoustic energy (nasal plus oral) emitted by the speaker. Nasalance is used to assess the degree of nasal resonance in speech.

Nasalisation – the process by which nasal airflow is added to sounds, typically vowels, due to the lowering of the velum. This can occur normally, as in the production of nasal sounds like [m], [n], and [ŋ], or abnormally, in cases of velopharyngeal dysfunction, leading to hypernasality.

Nasometry – a diagnostic tool used to measure nasal resonance during speech.

National Early Childhood Inclusion Act (NECIA) – a federal law that promotes the inclusion of young children with disabilities in early childhood programs alongside their non-disabled peers.

Neurogenic Speech Disorders – speech disorders that result from damage to the nervous system.

Neurotechnology in SLP refers to the use of advanced technologies that interface with the nervous system to assess, treat, or enhance communication abilities. This may include brain-computer interfaces or neurofeedback systems.

Neonatal Intensive Care Unit (NICU) – a specialised area within a hospital designed to provide intensive medical care for newborn infants who are premature, have low birth weight, or have health conditions that require close monitoring and specialised treatment.

Non-Academic Accommodations – modifications or supports provided to students with communication disorders outside of direct academic instruction. These may include environmental adjustments, assistive technology, or behavioural supports to facilitate participation in school activities.

Nonverbal Learning Disabilities – disorders characterised by significant deficits in motor, visual-spatial, and social skills, despite strong verbal abilities.

Occupational Therapy (OT) – a field of therapy that rehabilitates people with physical or mental illness through the performance of everyday tasks. Occupational Therapists often focus on the upper extremity (arm and hand), wheelchair mobility, activities of daily living, and visual-spatial skills in the rehab setting.

Oral Motor Exercises – exercises aimed at improving the strength, coordination, and function of the muscles used in speech.

Oral Reading for Language in Aphasia (ORLA) – a definition treatment approach for individuals with aphasia that involves repeated reading of sentences and paragraphs to improve reading comprehension and verbal expression.

Paediatric Communication Disorders – disorders that affect the ability to communicate effectively, occurring in children.

Paradoxical Vocal Fold Movement (PVFM) – a condition where the vocal folds involuntarily close during inhalation, leading to breathing difficulties, stridor, and sometimes voice changes. PVFM is often mistaken for asthma but is a distinct condition that requires specific speech therapy techniques to manage.

Parkinson's Disease – a progressive or degenerative medical condition that affects movement by affecting dopamine systems in the brain. People with Parkinson's Disease, or Parkinson's symptoms, can have speech and swallowing problems that can be helped by speech therapy.

Patient Outcome Tracking involves systematically collecting and analysing data on the progress and results of speech and language interventions. It helps SLPs measure the effectiveness of their treatments and make data-driven decisions about patient care.

Peer Support – strategy where students with similar abilities or experiences provide assistance, encouragement, and feedback to each other in the therapy or classroom setting.

Percentage of Consonants Correct (PCC) – a metric used to measure the accuracy of consonant production in speech. It is calculated by dividing the number of correctly produced consonants by the total number of consonants attempted, then multiplying by 100 to get a percentage.

Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS) – one of several previously separate subtypes of autism that were folded into the single diagnosis of Autism Spectrum Disorder (ASD) with the publication of the DSM-5 diagnostic manual in 2013.

Pharyngeal Flap – a surgical procedure used to correct velopharyngeal insufficiency (VPI), which is the inability of the soft palate to close completely against the back of the throat during speech, resulting in air escaping through the nose and causing hypernasal speech. During the procedure, a flap of tissue is taken from the posterior pharyngeal wall and attached to the soft palate. This creates a bridge that helps close the velopharyngeal port during speech while allowing for nasal breathing and the production of nasal sounds.

Phonation – sound made when air vibrates the vocal folds in the larynx to produce speech. In some motor speech disorders, phonation is absent, impaired, or mis-timed.

Phonemes – the sounds that are distinct in a language. The word “cat” has 3 phonemes: k + æ + t. Phonemes can be written using the International Phonetic Alphabet, or IPA.

Phoniatrics – a medical specialty focused on the study, diagnosis, and treatment of voice, speech, and language disorders.

Phoniatricians – medical doctors who specialise in the medical and surgical management of these conditions, often working closely with speech-language pathologists.

Phonological Awareness – a set of skills that enable a person to hear and manipulate the sounds in words regardless of the meaning. Rhyming, alliteration, segmenting, and blending are all phonological awareness skills.

Phonological Disorder – a type of speech sound disorder. Speech sound disorders are the inability to correctly form the sounds of words. Speech sound disorders also include articulation disorder, disfluency, and voice disorders.

Physical Therapy (PT) – a field of therapy that rehabilitates people with physical impairments through exercise, massage, heat, or other treatments that are not surgery or medication. Physical Therapists often focus on transfer skills (e.g. moving from bed to chair), walking, and climbing stairs in a rehabilitation setting.

Pragmatics – the social use of language, including tone of voice, taking turns in a conversation, providing context to a story, and using words appropriate to the audience or situation. Pragmatic skills are often impaired after a brain injury or a stroke on the right side of the brain.

Pragmatic Language Disorder (also known as social communication disorder) involves difficulties with the social use of language. This includes challenges with using language for different purposes, changing language according to the listener or situation, and following rules for conversation and storytelling.

Primary Referral Resource in SLP is the initial point of contact or source of information for identifying and referring individuals who may need speech and language services. This could include paediatricians, teachers, or other healthcare professionals.

Prosody – the melody of speech, including suprasegmental features such as rate, rhythm, intonation, volume, stress, and pitch. Prosody can convey emotion, sarcasm, a question vs a statement, and energy. Brain damage can impair a person's ability to produce or understand prosody. People with Broca's aphasia or apraxia are often dysprosodic. Those with right-hemisphere damage may not understand the speaker's intent if sarcasm is used, called sensory or receptive aprosodia.

Pull-Out Model – a service delivery approach where students are removed from their regular classroom to receive speech-language therapy services in a separate location.

Push-In Model – a collaborative classroom-based service delivery model where the speech-language pathologist provides therapy within the student's regular classroom setting.

Randomised Controlled Trials – research studies that randomly assign participants to different treatment groups to compare the effectiveness of interventions. They are considered the gold standard for evaluating the efficacy of speech and language therapies.

Rapid Automatised Naming (RAN) – a task that measures how quickly individuals can name a series of familiar items, such as letters, numbers, colours, or objects. It is used to assess processing speed and is often linked to reading abilities.

Receptive Aphasia – another name for *fluent aphasia* or *Wernicke's aphasia*, used because of the marked difficulty with comprehension.

Receptive Language Disorder – is one in which a child struggles to understand and process the messages and information they receive from others. Some children have a mixed receptive-expressive language disorder in which they have symptoms of both types of disorders.

Remote Intervention in SLP, also known as telepractice, refers to the delivery of speech and language services using telecommunications technology. It allows SLPs to provide assessment, treatment, and consultation remotely when in-person services are not feasible.

Resonance – the flow of air through the nose or mouth during speech. The velum prevents air from going through the nose in all but the nasal sounds (m, n, ng) in normal speech. Cleft palate, stroke, and progressive diseases can cause disorders in resonance in speech.

Resonance Disorders – disorders that affect the quality of the voice due to abnormal airflow in the oral and nasal cavities.

Respiration – breathing, and the first component of speech production.

Response to Intervention (RTI) Process – is a type of Multi-Tiered System of Support (MTSS) for providing services and interventions to struggling learners at increasing levels of intensity. It includes: universal screening, high-quality instruction.

Royal College of Speech and Language Therapists (RCSLT) – the professional body for speech and language therapists in the United Kingdom. It promotes the study and practice of speech and language therapy, supports research, and provides guidance and resources for its members.

Screening – a pass/fail procedure to identify individuals who may need a comprehensive speech and language evaluation or referral for other services.

Self-Advocating involves effectively communicating one’s needs, desires, and rights. It is a crucial skill for individuals with communication disorders, empowering them to seek appropriate support and accommodations in various settings, including educational and healthcare environments.

Sensory Processing Disorder (SPD) – a condition where the brain has difficulty receiving and responding to information that comes in through the senses. It can affect one or more of the sensory systems and may result in over- or under-sensitivity to sensory stimuli.

Specific Language Impairment (SLI) is characterised by difficulty with language that is not caused by known neurological, sensory, intellectual, or emotional deficit. It can affect the development of vocabulary, grammar, and discourse skills, with evidence that certain morphemes may be especially difficult to acquire (including past tense, copula be, third person singular). *In recent years, the term Specific Language Impairment (SLI) has been replaced with Developmental Language Disorder (DLD).*

Speech-Generating Device (SGD) – electronic augmentative and alternative communication (AAC) systems used to supplement or replace speech or writing for individuals with severe speech impairments, enabling them to verbally

communicate. SGDs can produce electronic voice output by using digitised recordings of natural speech or through speech synthesis.

Spastic Dysarthria – a type of dysarthria related to bilateral damage of the upper motor neuron tracts of the pyramidal and extra- pyramidal tracts. Speech of affected individuals is slow, effortful, and has a harsh vocal quality.

Speech – expressing language through articulated sounds. Speech consists of respiration, phonation, articulation, resonance, and prosody. Disorders of speech may include problems with any of these areas, including fluency (stuttering or stammering) and voice.

Speech Clarity – the clearness and distinctness of speech sounds.

Speech Intelligibility – the degree to which speech is understood by a listener.

Speech and Language Therapist (SLT or SALT) – the same as a speech-language pathologist. This title is used for professionals who are trained to evaluate and treat communication and swallowing disorders in many countries such as the UK.

Speech-Language Pathologist (SLP) – the official title given to professionals who are trained to evaluate and treat communication and swallowing disorders. The term ‘Speech-Language Pathologist’ is meant to better reflect the scope of practice of professionals commonly referred to as ‘speech therapists.’ In the US and Canada, entry-level education to qualify to be a SLP is a Master’s degree.

Speech-Language Resource Room – designated space within a school where students receive specialised speech and language services, often in small groups or individually.

Speech Therapy – treatment for communication and swallowing disorders.

Stroke – an event inside the brain in which there is a sudden loss of function, also known as a brain attack or cerebrovascular attack (CVA). A stroke occurs when a part of the brain is deprived of the oxygen it needs to function properly.

Structured Classroom Layout – an organised physical environment designed to support students with communication disorders. It typically includes clearly

defined areas for different activities, visual supports, and minimised distractions to enhance learning and communication.

Stuttering – a speech disorder characterised by frequent disruptions in the flow of speech.

Subglottic Stenosis – a narrowing of the airway below the vocal cords (subglottis) and above the trachea. This condition can be congenital or acquired and can cause breathing difficulties, stridor, and voice changes. Treatment often involves surgical intervention to widen the airway.

Syntax – the rules for combining words in a language. Syntax is often impaired in non-fluent aphasia.

Tachylalia – excessively rapid speech.

Technology-Assisted Tools – devices and software used to aid in the assessment and treatment of speech and language disorders.

Test of Early Written Language (TEWL) – a standardised assessment that measures the early writing skills of children aged 4 to 10 years. It evaluates both the writing process and the written product.

Traumatic Brain Injury (TBI) – an injury to the brain caused by external force, leading to cognitive, physical, and speech impairments.

Videofluoroscopic Swallow Study (VFSS) – an imaging technique used to evaluate the swallowing process.

Vineland Adaptive Behaviour Scales (VABS) is a standardised assessment tool used to measure adaptive behaviours, including communication, daily living skills, socialisation, and motor skills, in individuals from birth to adulthood.

Visual-Spatial Skills – the ability to understand and remember the spatial relations among objects.

Voice Disorders – disorders that affect the pitch, loudness, or quality of the voice.

Vowel – a speech sound made with an open vocal tract that forms the nucleus of a syllable.

Wernicke’s Aphasia is characterised by fluent speech that does not make sense. Because of this, Wernicke’s aphasia is also known as fluent aphasia and receptive aphasia. Wernicke’s aphasia is sometimes referred to as “word salad” because speech tends to include random words and phrases thrown together.

Woodcock Reading Mastery Tests (WRMT) – a comprehensive assessment that evaluates reading skills, including word identification, reading fluency, and comprehension, in individuals from kindergarten through adulthood.

Writing Difficulties – problems with writing skills, often related to language-based learning disorders.

REFERENCES

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing., 2013.
2. American Speech-Language-Hearing Association. Clinical Topics. URL: <https://www.asha.org/practice-portal/clinical-topics/> (Accessed 20.03.2024, 13:00h).
3. Association for Child and Adolescent Mental Health. URL: <https://acamh.onlinelibrary.wiley.com/> (Accessed 23.03.2024, 12:00h).
4. Autism Speaks. URL: <https://www.autismspeaks.org/> (Accessed 23.03.2024, 13:00h).
5. Bowen, C. Functional Speech Disorders - What are they? URL: https://www.speech-language-therapy.com/index.php?Itemid=120&catid=11%3Aadmin&id=87%3Afunctional&option=com_content&view=article (Accessed 13.03.2024, 17:20h).
6. Bilinguistics. Fetal Alcohol Syndrome: Speech Implications, Treatment Options, and Resources. URL: <https://bilinguistics.com/fetal-alcohol-syndrome-speech-implications-treatment-options-and-resources/> (Accessed 23.04.2024, 12:40h).
7. California Department of Education. URL: <http://www.cde.state.co.us> (Access 23.03.2024, 13:34h).
8. CHOC Children's. URL: <https://www.choc.org/> (Access 23.03.2024, 15:00h).
9. Cincinnati Children's Hospital Medical Center. Pragmatic Language Disorder. URL: <https://www.cincinnatichildrens.org/-/media/Cincinnati-Childrens/Home/service/s/speech/hcp/doctor-info/information-language-PDF-pragmatic-lan-6.pdf> (Accessed 23.04.2024, 12:45h).
10. Clínica Universidad de Navarra. URL: <https://www.cun.es/en/diseases-treatments/diseases/dysphonia> (Accessed 23.03.2024, 15:30).
11. Communication Community. Self-Advocacy and Speech Therapy. URL: <https://www.communicationcommunity.com/what-is-self-advocacy/> (Accessed 12.05.2024, 17:55h).
12. Connected Speech Pathology. The impact of hypokinetic dysarthria on communication. URL: <https://connectedspeechpathology.com/blog/the-impact-of-hypokinetic-dysarthria-on-communication> (Accessed 10.05.2024, 12:45h).
13. DCDQ. The Developmental Coordination Disorder Questionnaire. URL: <https://www.dcdq.ca> (Accessed 06.04.2024, 17:15h).

14. Hopkins Medicine. URL: <https://www.hopkinsmedicine.org/health> (Accessed 23.03.2024, 16:00h).
15. Mayo Clinic. URL: <https://www.mayoclinic.org/> (Accessed 23.03.2024, 16:00h).
16. Mencap. URL: <https://www.mencap.org.uk/> (Accessed 23.03.2024, 16:35).
17. MedlinePlus. URL: <http://medlineplus.gov/ency/article/001541.htm> (Accessed 23.03.2024, 16:45h).
18. National Center for Biotechnology Information (NCBI). (n.d.). Hypokinetic dysarthria. URL: <https://www.ncbi.nlm.nih.gov/medgen/105312> (Accessed 15.05.2024, 10:00h).
19. National Institute on Deafness and Other Communication Disorders. URL: <https://www.nidcd.nih.gov> (Accessed 23.03.2024, 16:50h).
20. Nicolosi, Lucille., Harryman, Elizabeth., Kresheck, Janet. Terminology of Communication Disorders: Speech-language-hearing. United Kingdom: Lippincott Williams & Wilkins, 2004.
21. North Shore Pediatric Therapy. What is the Beery VMI? URL: <https://www.nspt4kids.com/specialties-and-services/occupational-therapy/understanding-beery-vmi> (Accessed 22.05.2024, 10:50h).
22. Oxford Reference. URL: <https://www.oxfordreference.com/> (accessed 23.03.2024, 17:00h).
23. Pearson Assessments. URL: <https://www.pearsonassessments.com/> (Accessed 02.04.2024, 17:20h).
24. Pearson Clinical. Woodcock Reading Mastery Tests, Third Edition (WRMT-III). URL: <https://www.pearsonclinical.com.au/store/auassessments/en/Store/Professional-Assessments/Academic-Learning/Woodcock-Reading-Mastery-Tests%2C-Third-Edition/p/P100010181.html> (Accessed 23.05.2024, 18:00h).
25. Psychiatry.org. URL: <https://www.psychiatry.org/psychiatrists/practice/dsm> (Accessed 23.03.2024, 17:15h).
26. Raising Children Network. Language Delay. URL: <https://raisingchildren.net.au/babies/development/language-development/language-delay> (Accessed 13.05.2024, 11:15h).
27. Royal College of Speech and Language Therapists. About the Royal College of Speech and Language Therapists. URL: <https://www.rcslt.org/about-us/> (Accessed 03.05.2024, 17:20h).

28. ScienceDirect. RAN and Orthographic Processing. URL: <https://www.sciencedirect.com/science/article/abs/pii/S0022096518304351> (Accessed 30.05.2024, 09:10h).
29. SpeechPathology.com. What is Sensory Processing Disorder (SPD)? URL: <https://www.speechpathology.com/ask-the-experts/what-sensory-processing-disorder-spd-20628> (Accessed 11.05.2024, 17:20h).
30. Stanford Children's Health. URL: <https://www.stanfordchildrens.org/en/topic/default?id=the-neonatal-intensive-care-unit-nicu-90-P02389> (Accessed 23.03.2024, 17:10h).
31. Tactus Therapy Solutions. Speech Therapy Terms Defined. URL: <https://tactustherapy.com/speech-therapy-terms-defined/> (Accessed 23.03.2024, 17:15h).
32. TheraPlatform. URL: <https://www.theraplatform.com/> (Accessed 03.04.2024, 14:15h).
33. The Watson Institute. Structured Learning Classrooms in Special Education. URL: <https://www.thewatsoninstitute.org/resources/setting-up-a-structured-classroom/> (Accessed 23.05.2024, 15:15h).
34. UC Davis Health. URL: <https://health.ucdavis.edu/> (Accessed 23.03.2024, 17:10h).
35. U.S. Department of Education. Individuals with Disabilities Education Act (IDEA). URL: <https://sites.ed.gov/idea/about-idea/> (Accessed 10.04.2024, 10:35h).
36. Vaia. Morphosyntax: Definition, Goals & Examples. URL: <https://www.vaia.com/en-us/explanations/english/morphology/morphosyntax/> (Accessed 23.04.2024, 17:30h).
37. Western Psychological Services. Conners Comprehensive Behavior Rating Scales (CBRS). URL: <https://www.wpspublish.com/conners-cbrs-conners-comprehensive-behavior-rating-scales> (Accessed 03.04.2024, 16:30h).
38. World Health Organization. International Statistical Classification of Diseases and Related Health Problems (10th revision). Geneva: World Health Organization, 1992.
39. World Health Organization. ICD-11. URL: <https://icdcdn.who.int/icd11> (Accessed 23.03.2024, 17:15h).

Учебное издание

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АНГЛИЙСКИЙ ЯЗЫК ДЛЯ ЛОГОПЕДОВ

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Часть 2

Irina Andersen

ENGLISH FOR SPEECH-LANGUAGE PATHOLOGISTS

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Московский педагогический государственный университет (МПГУ).
119435, Москва, ул. Малая Пироговская, д. 1, стр. 1.

Подписано в печать 06.08.2024. Формат 60x90/16.
Бум. офсетная. Печать цифровая. Объем 10,13 п. л.
Тираж 500 экз. Заказ № 1596.

ISBN 978-5-4263-1416-0



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