



An overview of tools useful in the speech diagnosis of a child with intellectual disability

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Object literature offers standards of diagnostic procedure for oligophasia. The book market still lacks, however, tools that would be developed for the purpose of logopaedic diagnoses of persons with intellectual disabilities (ID), which could fully assess the speech of a child with oligophasia. Presently, specialists utilise tools used for diagnosing other disorders or create their own research tools. The choice of relevant diagnostic tools, and, as a result – later result analysis, is a complex process mostly due to the great variation of functioning of persons with ID, and due to the lack of developed reference norms for the population of persons with ID (conclusions on language development in this group are by and large quite general, frequently formulated intuitively and without support by empirical studies). As a result, the author concluded an analysis of diagnostic tools available on the book market that could provide aid in the logopaedic assessment of a child with ID, stressing the need to create an original tool adapted for diagnosing the speech disorder of oligophasia.

KEY WORDS: logopaedic diagnosis, diagnostic tools, intellectual disability, oligophasia

The problem of selection of research tools in the process of diagnosing of a child with ID

According to the general methodology of logopaedic practice developed by Grażyna Jastrzębowska and Olga Pelc-Pękala¹, diagnosis in speech therapy is the process of formulation and verification of hypotheses. Verification takes place most commonly by the use of diagnostic tools that may comprise e. g. language capacity tools, communication efficiency tests, pronunciation tests, etc. They help to determine the normative diagnosis (constituting e. g. the basis for any certificate of the need for special education) and the profile diagnosis that indicates a child's strong and weak sides. Finally, they help to formulate the diagnosis and suggest therapy supporting the child's development.²

Subject literature includes diagnostic progress standards³ for oligophasia. The book market still lacks tools that were specifically developed for the purpose of logopaedic diagnosis of persons with ID that could fully assess the speech of a child with oligophasia⁴.

¹ G. Jastrzębowska, O. Pelc-Pękala, *Metodyka ogólna diagnozy i terapii logopedycznej*, [in:] *Logopedia – pytania i odpowiedzi. Podręcznik akademicki*, ed. by T. Gałkowski, G. Jastrzębowska, vol. 2, Wydawnictwo Uniwersytetu Opolskiego, Opole 2003, pp. 309–345.

² M. Kielar-Turska, *Testy sprawności językowych i komunikacyjnych w diagnostyce logopedycznej*, [in:] *Metodologia badań logopedycznych z perspektywy teorii i praktyki*, ed. by S. Milewski, K. Kaczorowska-Bray, Wydawnictwo Harmonia Universalis, Gdańsk 2015, pp. 214–215.

³ J. Bleszyński, *Diagnoza rozwoju mowy osób z niepełnosprawnością intelektualną*, [in:] *Diagnoza logopedyczna. Podręcznik akademicki*, ed. by E. Czaplewska, S. Milewski, Gdańskie Wydawnictwo Psychologiczne, Sopot 2012, pp. 177–222; U. Jęczeń, *Postępowanie logopedyczne w przypadkach oligofazji*, [in:] *Logopedia. Standardy postępowania logopedycznego. Podręcznik akademicki*, ed. by S. Grabias, J. Panasiuk, T. Woźniak, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2015, pp. 267–282.

⁴ This problem was already mentioned in an article by the author (M. Szurek, *Detailed logopaedic diagnosis of a child affected with moderate intellectual disability as the basis for effective therapy*, „Interdyscyplinarne Konteksty Pedagogiki Specjalnej” 2017, no. 18, pp. 165–184).

Presently, experts utilise tools foreseen for diagnosing other dysfunctions or create their own research tools.

The selection of suitable diagnostic tools, and, as a result – the later analysis of results, is a complex process, primarily due to the high level of differentiation in the functioning of persons with ID and the lack of developed representative standards for the population of persons with ID (conclusions concerning the language development of this group are usually very general, most frequently formulated intuitively, without the support of empirical studies). Oligophasia is a term with diverse meanings, defined most commonly from the medical and logopaedic points of view. This stems from the dysfunctions in the background of delayed speech development and the numerous overlapping speech impediments that are difficult to capture and assess. The multitude of definitions indicates the complexity of this deficiency and the related diagnostic difficulties. Most generally, it may be concluded that oligophasia is a speech disorder, a complete lack thereof or its delayed development, related to intellectual disability. It is characterised by deformations of content, form and substance of the language, with the depth of the indicated dysfunctions depending on the level of intellectual disability⁵. A further problem is the functioning of children with ID on various levels depending on the level of their intellectual dysfunction⁶. For instance, children with minor intellectual disability have the same speech disorders as children in the norm⁷, how-

⁵ J. Surowaniec, *Słownik terminów logopedycznych*, Wyższa Szkoła Pedagogiczna w Krakowie, Kraków 1992.

⁶ The classic categorisation discerns the following degrees of ID: minor, moderate, significant, deep (I. Chrzanowska, *Pedagogika specjalna. Od tradycji do współczesności*, Oficyna Wydawnicza „Impuls”, Kraków 2018, p. 249). Currently, however, a departure is seen from the fixed subdivision of ID into grades, only assuming the cognitive criterion. In this case, one distinguishes between minor and major ID, stressing rather the capacities than the limitations of persons with ID (R.J. Kijak, *Niepełnosprawność intelektualna. Między diagnozą a działaniem*, Centrum Rozwoju Zabobów Ludzkich, Warszawa 2013, p. 21).

⁷ Differences in functioning are seen between children from the top and bottom boundary of the ranges of a specific degree of ID.

ever in terms of deeper disabilities (moderate, significant), compound speech disorders may arise, such as dyslalia coupled with dysarthria, stuttering, cluttering, bradylalia or tachylalia⁸.

The fundamental signs of oligophasia co-existing with delayed speech development are primarily: extensive improper articulation of individual sounds or groups of sounds, slower acquisition of passive and active vocabulary, reduced narrative skills visible during the construction of statements on a given subject, disturbed syntactic skills, persisting agrammatisms in speech and reduction of verbal activity⁹.

As indicated earlier, the communication capacities of persons with ID are set against the backdrop of globally delayed psychological and physical development. Symptoms of oligophasia are found beside disturbances of cognitive processes that include: perception, thinking, memory, attention as well as emotional and motivation processes¹⁰. In addition, in little children with ID, there can occur dysfunctions in reactions to stimuli, disturbed contact with the en-

⁸ Conf. A. Szuniewicz, *Próba badań wad wymowy dzieci upośledzonych umysłowo w warszawskich szkołach specjalnych*, „Logopedia” 1967, no. 7, pp. 112–118; T. Gałkowski, *Charakterystyka funkcji mowy i ich zaburzeń*, [in:] *Wybrane zagadnienia z defektologii*, ed. by T. Gałkowski, vol. 1, Wydawnictwo Akademii Teologii Katolickiej, Warszawa 1972; E. Minczakiewicz, *Logopedia. Mowa, rozwój, zaburzenia, terapia*, Wydawnictwo Naukowe Akademii Pedagogicznej, Kraków 1996; Z. Tarkowski, *Zaburzenia mowy dzieci upośledzonych umysłowo*, [in:] *Logopedia. Pytania i odpowiedzi*, ed. by T. Gałkowski, G. Jastrzębowska, Wydawnictwo Uniwersytetu Opolskiego, Opole 1999, pp. 489–495; J.J. Bleszyński, K. Kaczorowska-Bray (ed.), *Diagnoza i terapia logopedyczna osób z niepełnosprawnością intelektualną*, Wydawnictwo Harmonia Universalis, Gdańsk 2012; U. Jęczeń, *Postępowanie logopedyczne w przypadkach oligofazji*, [in:] *Logopedia. Standardy postępowania logopedycznego. Podręcznik akademicki*, ed. by S. Grabias, J. Panasiuk, T. Woźniak, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2015, pp. 267–282.

⁹ A. Rakowska, *Język, komunikacja, niepełnosprawność*. *Wybrane zagadnienia*, Wydawnictwo Naukowe Akademii Pedagogicznej, Kraków 2003, p. 127.

¹⁰ U. Jęczeń, *Symptomy oligofazji w upośledzeniu umysłowym*, [in:] *Logopedia. Teoria zaburzeń mowy*, ed. by S. Grabias, M. Kurkowski, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2012, pp. 381–393.

vironment, lack of organisation during execution of activities on objects as well as disorders of stature and locomotion¹¹.

Due to the differences of speech in children with ID that can be observed, object literature differentiates between two fundamental models of speech development in the described group: one characteristic for persons with minor ID (minor disability level), and one characteristic for persons with deeper ID (moderate, significant and major disability level). The model of language functioning in persons with minor ID does not fundamentally differ from the language model of persons in the intellectual norm. This stems primarily from the fact that both biological foundations of speech development as well as the mechanisms responsible for understanding and creation of speech are the same in both groups. In addition, the development speech during ontogenesis proceeds along all the same stages. The model of language functioning in persons with deeper ID fundamentally differs from the model of persons in the norm, because persons with deeper ID have deficits of the biological mechanism of speech development, their speech differs quantitatively and qualitatively, and speech development proceeds autonomously (it does not reflect any stadium of speech development of persons in the intellectual norm), and their language is strongly limited; it has syntactic, semantic and phonological properties that are specific to this group. The deeper the ID, the deeper is the speech development delay¹². Among children with deeper ID, one can also find those who do not communicate verbally at all.

Statements of persons with ID show certain properties characteristic for this group. These include:

- a) construction of shorter statements as compared to persons in the norm – the deeper the ID, the shorter the statement;

¹¹ S. Siwek, *Upośledzenie umysłowe*, [in:] *Neuropsychologia kliniczna dziecka. Wybrane zagadnienia*, ed. by A.R. Borkowska, Ł. Domańska, Warszawa 2007, pp. 31–83.

¹² Z. Tarkowski, *Zaburzenia mowy dzieci upośledzonych umysłowo*, [in:] *Logopedia. Pytania i odpowiedzi*, ed. by T. Gałkowski, G. Jastrzębowska, Wydawnictwo Uniwersytetu Opolskiego, Opole 1999, pp. 489–495.

- b) limited vocabulary, reduction to concrete concepts (no abstract concepts), usage mostly of nouns and verbs, to a lesser extent – adjectives, adverbs, pronouns, numerals, conjunctions and prepositions – the deeper the ID, the poorer the vocabulary;
- c) prevalence of simple and incomplete sentences, coordinate compound sentences or adversative sentences, usage mostly of the present tense, less frequently – past tense, sporadically – future tense – the deeper the ID, the poorer the statement structure;
- d) agrammatisms in speech caused by the inability to master complex rules of grammar – the deeper the ID, the more difficulty mastering grammar¹³.

It is clear that in case of children with ID, the mode of acquisition of language skills differs from children in the intellectual norm, and is characterised by a different dynamic (in persons with ID, the development of language skills proceeds much more slowly, and the individual stages of development of speech take longer)¹⁴. The lack of diagnostic tools developed especially for persons with ID encourages the undertaking of an overview and categorisation of existing tools developed for persons in the developmental norm for future use with persons with ID. The significant differences between the functioning of children with various levels of ID, as well as within a single degree of ID, also contributes to difficulties in the choice of tools for persons in the norm that could be useful when logopaedically diagnosing children with ID.

When choosing specific test tools in order to logopaedically diagnose children with ID, one needs to retain a certain level of caution and exhibit fluency in the theoretical basis in logopaedic diagnosis in order to properly choose the tests. The critical analysis of

¹³ Z. Tarkowski, *Zaburzenia mowy dzieci upośledzonych umysłowo*, [in:] *Logopedia. Pytania i odpowiedzi*, ed. by T. Gałkowski, G. Jastrzębowska, Wydawnictwo Uniwersytetu Opolskiego, Opole 1999, pp. 489–495.

¹⁴ It seems reasonable to reflect every aspect of language in a separate test and compare them to development norms.

available tools included in this article will make it easier for speech therapists to choose diagnostic tools best suited to the needs of children with ID. The choice of suitable tests from among those available on the market for the purpose of logopaedic diagnosis will allow the determination of the fundamental issues that hinder or prevent language communication, e. g. a poor vocabulary, compounded speech impediments, agrammatisms or significant delays in the development of all aspects of speech. This will e. g. allow the determination of the mode of communication of the child with its environment, of whether the child makes any attempts at verbal contact, whether they understand speech and are able to communicate with their environment.

Selected diagnostic tools that could be used for logopaedic diagnoses of children with ID

Despite the fact that diagnostic analyses rely to a great extent on diagnostic tests conducted with the child, the speech therapist cannot forget that it should „take the form of a discourse between the analysing and the analysed, being an opportunity to observe their language and communication behaviour”¹⁵. The place, where the test is conducted, is important (it should provide comfort and security, be isolated, quiet), and the objects found there (e.g. toys and test materials) should provide help to make contact and elicit specific reactions of the subject¹⁶. Due to the problems with longer-term attention focus of children with ID and in order to reduce the prob-

¹⁵ M. Kielar-Turska, *Testy sprawności językowych i komunikacyjnych w diagnozie logopedycznej*, [in:] *Metodologia badań logopedycznych z perspektywy teorii i praktyki*, ed. by S. Milewski, K. Kaczorowska-Bray, Wydawnictwo Harmonia Universalis, Gdańsk 2015, p. 216.

¹⁶ M. Kielar-Turska, *Testy sprawności językowych i komunikacyjnych w diagnozie logopedycznej*, [in:] *Metodologia badań logopedycznych z perspektywy teorii i praktyki*, ed. by S. Milewski, K. Kaczorowska-Bray, Wydawnictwo Harmonia Universalis, Gdańsk 2015, p. 216.

ability of a sudden motivation drop due to exhaustion, one should adapt the time of the test to the capacities of the child with ID, spreading it out over several meetings. One needs to note that the choice of suitable diagnostic tools and methods to conduct the diagnosis depends on the depth of the dysfunction, the intensity of ID symptoms and the age of the patient. Significant is also the question, whether the child communicates verbally or not (in particular in case of deep ID or compound disabilities)¹⁷. The logopaedic test should be amended by thorough observation of the child's spontaneous behaviour, and expanded to include other tools serving a comprehensive assessment of the functioning of the child (e. g. Schopler's PEP-R).

A tool that could be of assistance in diagnosing diverse aspects of speech disorders of the child with ID is the *Test Sprawności Językowej* (Polish for *Language Skills Test*, TSJ) by Zbigniew Tarkowski¹⁸. This is a standardised tool used for testing the current level of speech development and for discovery of development delays or dysfunctions in various areas. The test is used for diagnosing language skills in children aged four to eight years. It is composed of seven subtests, made up of: understanding a story, vocabulary, correcting sentences, inflection, asking questions, formulating pleas and commands and telling stories. Every subtest checks, respectively: the understanding of longer statements, the vocabulary size on the basis of the ability to name objects, the capacity to perceive and correct grammatical and semantic errors, knowledge of grammar on the basis of the ability to decline nouns, the ability to create questions about a text, the ability to express desires using pleas and orders, the ability to recall a test listened to. During the test, diverse techniques are used to test language skills spanning comprehension and speech on four language

¹⁷ The group of children with ID includes those, for whom the only mode of communication are weakly pronounced facial expressions and gestures, children using limited language, not comprehending the social function of language and children who do not speak, having difficulties with verbal expression.

¹⁸ Z. Tarkowski, *Test Sprawności Językowej*, Wydawnictwo Fundacji „Orator”, Lublin 2001.

levels: grammar, lexis, context and extralinguistic. The test allows the speech therapist to determine, based on the analysis of the language skills profile of the child, to describe disharmonies for all language functions of the child with ID measured by the TSJ and aim the therapy towards less developed skills.

The book market also offers the *Test Rozwoju Językowego* (Polish For *Language Development Test*, TRJ), created by Magdalena Smoczyńska, Ewa Haman, Ewa Czaplewska, Agnieszka Maryniak, Grzegorz Krajewski, Natalia Banasik, Magdalena Kochońska, Magdalena Łuniewska and Marta Morstin¹⁹. The TRJ is a normalised psychometric tool used to diagnose language competences (determine the level of language development) of children aged four to 11 years that psychologists and speech therapists may utilise in their work. Subtests assess language competences spanning: passive and active vocabulary, understanding grammar structures, comprehension of the text listened to. The execution of all subtests takes about an hour, necessitating the subdivision of the diagnosis across 2–3 meetings (adapting the pace of work to the capabilities of a child with ID). When diagnosing a child with ID, the tool allows one to determine the level, at which it is similar in terms of language development to children developing typically. Requirements of standardisation do not allow free modification of the diagnostic process. The speech therapist may, however, adapt it to the individual needs of the patient, forgoing developed norms. The language profile determined using the results allows one to describe specific objectives in the therapeutic process, depending on the type and depth of deficits diagnosed for the child.

Sprawdź jak mówię. Karta badania logopedycznego z materiałami pomocniczymi [Polish for *See how I talk. Speech therapy assessment sheet with auxiliary materials*] by Elżbieta Stecko²⁰ is a further tool that can

¹⁹ M. Smoczyńska, E. Haman, E. Czaplewska, A. Maryniak, G. Krajewski, N. Banasik, M. Kochońska, M. Łuniewska, M. Morstin., *Test Rozwoju Językowego*, Instytut Badań Edukacyjnych, Warszawa 2015.

²⁰ E. Stecko, *Sprawdź jak mówię. Karta badania logopedycznego z materiałami pomocniczymi*, Wydawnictwo ES, Warszawa 2014.

be of help during logopaedic diagnoses. The work is foreseen for diagnosing children of various ages – from toddlers to school-age children (older than seven) characterised by different levels of psychomotor and mental development – for children with speech impairments and delayed speech development, development deficiencies, with a positive pregnancy and birth period. The tool is made up of colourful drawings used to test speech, the interview sheet, the instinct assessment sheet, the test and registration sheet for non-linguistic voice behaviour, the sheet for assessing capacities of speech organs and speech itself (e. g. comprehension, naming, execution of statements and articulation) and a summary sheet to mark the score. What is important, thanks to the tool the speech therapist may test instincts of little children, and in children up to the third year of age assess breathing and swallowing functions, the construction and efficiency of the articulation organs, the development of speech, the status of phonematic hearing, hearing memory and attention. In case of older children (above the third year of age), assessed is the efficiency of articulation organs (spanning mimicking of movements), speech comprehension and expression, articulation as well as hearing analysis and synthesis. The tool allows one to present the image of development of speech in a child with ID. The figures of the tool are sometimes difficult for children, because at times some drawings may be misunderstood by them.

The speech therapist may also make use of offerings foreseen exclusively for diagnosing the youngest of children. One of these are the *Inwentarze Rozwoju Mowy i Komunikacji* (Polish for *Inventories of Speech and Communication Development*, IRMIK) developed by Magdalena Smoczyńska, Grzegorz Krajewski, Magdalena Łuniewska, Ewa Haman, Krzysztof Bulkowski and Magdalena Kocharńska. As the authors indicate, “these are modern diagnostic tools used for the initial assessment of the level of speech development in children aged up to three years. These two parental questionnaires, WORDS AND GESTURES and WORDS AND SENTENCES, are the Polish adaptation of known MacArthur-Bates inventories, broadly used in various countries both for research as well as clinical purposes,

in particular to diagnose language development levels in children with development problems”²¹. This standardised and normalised test allows one to determine the level of language development in little children and to refer these results back to development norms. Thanks to this, the recognition of deficiencies in the development of speech in a child with ID becomes possible already at an early stage.

The scale for assessing the speech of a child with aphasia-type speech disorders, the *AFA-Skala*²² by Anna Paluch, Elżbieta Drewniak-Wołosz and Lucyna Mikosza, is a further publication for assessing children at pre-school and early school age. The test using the *AFA-Skala*, as the authors stress in the introduction to the work, is based on observations of child behaviour in an experimental situation, during which conditions are created as similar to natural situations as possible. The suggested trials are used to assess key aspects related to speech – the level of comprehension and expression of speech. The tool may be used to assess the understanding of individual names (mainly nouns and verbs, but also simple adjectives (including colours), adverbs, numerals and pronouns, simple and complex commands, simple sentences as well as coordinate/ subordinate complex ones, the comprehension of prepositions, comprehension of simple questions (referring to specific items or figures and those without specific objects or drawings)). Additionally, the skill of interchanging mimicking and action is observed, as is the mode of making emotional and social contact. Assessed is also the skill to repeat individual sounds, syllables (opposing ones with primary and secondary sounds), two-syllable and longer words. In terms of expression, the tool is used to assess the mimicking of onomatopoeia, naming words and simple sentences. Assessed is the skill to construct a longer statement on the basis of a figure, as well as cause-and-effect thinking (arranging a picture story). Assessed is

²¹ M. Smoczyńska, G. Krajewski, M. Łuniewska, E. Haman, K. Bulkowski, M. Kochańska, *Inwentarze rozwoju mowy i komunikacji (IRMIK): SŁOWA I GESTY, SŁOWA I ZDANIA. Podręcznik*, Instytut Badań Edukacyjnych, Warszawa 2015, p. 7.

²² A. Paluch, E. Drewniak-Wołosz, L. Mikosza, *AFA-SKALA. Jak badać mowę dziecka afatycznego?*, Oficyna Wydawnicza „Impuls”, Kraków 2008.

the issue, whether the child communicates spontaneously, whether they ask questions, formulate pleas and expresses its needs. The authors recommend noting the plane of non-verbal expressions – gestures and facial expressions – during the test. The material contained in the tool is clear, easily recognised by children with ID – as it mostly refers back to specific situations, and the presented objects are thematically related to the child (they stem from their closest environment). The material was developed in a suitable order with respect to the parts of speech that emerge during language development in the child, and chosen suitably due to the relevant linguistic criterion (phonetics). The *AFA-Skala* is an auxiliary tool to assess child speech dysfunctions; it is not standardised, hence the therapist has full liberty with the test – they can change the order, modify tasks, adapt them to the child's level, forgoing e. g. more difficult examples. Sadly, the scale does not assess all language skills – others must be amended by other tests.

When diagnosing a child with ID, the speech therapist may also use the *Diagnoza rozwoju ucznia z niepełnosprawnością intelektualną w stopniu umiarkowanym. Arkusz monitoringu rozwoju ucznia* [Polish for *Diagnosis of development of pupils with moderate intellectual disability. Pupil development observation sheet*] developed by Alicja Tanajewska and Renata Naprawa²³. The entire sheet includes areas, standards and education content concerning: self-care, health and communication education, cognitive and emotional-motivational development, social education, learning Polish (including the ability to communicate with the environment, preparation ahead of learning to read and write), mathematics, nature, music, arts, technology, computer science and physical education. The authors indicate that the prepared tool allows for a diagnosis of the child's development and determination of the level of mastery of specific skills among the ranges quoted above. The speech therapist may use selected

²³ A. Tanajewska, R. Naprawa, *Diagnozą rozwoju ucznia z niepełnosprawnością intelektualną w stopniu umiarkowanym. Arkusz monitoringu rozwoju ucznia*, Wydawnictwo Harmonia Universalis, Gdańsk 2014.

trials from the publication that will allow them to expand the diagnostic scope and indicate deficits in the area of cognitive and emotional-motivational development, including areas such as: communication with the environment, hearing perception, visual perception, preparation ahead of reading, knowledge of spatial relations, classification of objects and temporal orientation. Even though the authors foresaw this tool to be used with children with moderate ID, it will prove itself to expand the diagnosis in children with other levels of ID with an appropriate adaptation of the trials.

Kwestionariusz diagnostyczny zaburzeń mowy ze szczególnym uwzględnieniem afazji i dysarthrii dla młodzieży i dorosłych [Polish for *Diagnostic questionnaire of speech disorders with particular consideration for aphasia and dysarthria for youths and adults*], authored by Katarzyna Szłapa, Iwona Tomasik and Sławomir Wrzesiński,²⁴ is recommended for diagnosing youths and adults with aphasia and dysarthria. However, it will also prove itself in diagnosing language communication disorders in children with ID. The questionnaire is composed of two parts. The first is a diagnostic questionnaire that includes detailed instructions for the test and a sheet for registering the patient's speech; the second contains visual material for the test, composed of drawings and photographs, as well as verbal material. In the first part, testing auditory gnosis, includes simple figures representing objects from the closest environment (and corresponding sounds recorded on CD). Then, the efficacy of the articulatory organ is assessed. Subsequent tests entail the indication of specific parts of the body, naming simple nouns, verbs, adjectives (including colours), adverbs, numerals and prepositions. The tool also includes a test entailing the construction of sentences based on the presented figures. A great advantage of the tool are the realistic photographs it contains, which present daily life situations and actual objects present within the environment of a child with ID. Subsequent tests

²⁴ K. Szłapa, I. Tomasik, S. Wrzesiński, *Kwestionariusz diagnostyczny zaburzeń mowy ze szczególnym uwzględnieniem afazji i dysarthrii dla młodzieży i dorosłych*, Wydawnictwo Harmonia Universalis, Gdańsk 2014.

will not be useful for diagnosing a child with ID due to excess difficulty – as they concern the recognition of capital and lowercase letters, reading syllables, one-syllable and more difficult words. This part, however, can be modified, asking the child to repeat syllables and words or used with older children. Next, the skill to read sentences with blanks is assessed, as is storytelling (with the story repeated from memory afterwards), recognition of numbers and mathematical signs and solving mathematical problems.

When discussing tools useful in diagnosing children with ID, one must note the *Całościowe badanie logopedyczne z materiałem obrazkowym* [Polish for *Comprehensive speech therapy assessment with visual aids*] by Danuta Emiluta-Rozya²⁵. Even though this tool is not standardised, the result of long-term experiences of the author and used only for a qualitative assessment, it includes many tests, thanks to which a comprehensive logopaedic diagnosis is possible. Any test conducted using this tool is comprehensive – it assesses the linguistic and non-verbal behaviour of the child, and is used to analyse the conditions of its development. The author does not describe the age range for the patients, substantiating this with the adaptation of the diagnostic trials to the age and cognitive capacities of the diagnosed children. The tool can only be used by a qualified specialist – a speech therapist. The test is divided into two parts. The first spans; an anamnesis, a preliminary assessment of the child's development and of this pre-verbal and verbal communication, as well as specialised trials. The speech therapist is able to give a preliminary diagnosis after this phase, describing the relevant norm of verbal communication development, its disturbed development or speech development delays. The second stage is described as a detailed logopaedic assessment; it is dependent on the results of the first stage – if the first one would find dysfunctions or delays, the specialist can choose specific trials, their order and the relevant language material. The second stage is composed of the following

²⁵ D. Emiluta-Rozya, *Całościowe badanie logopedyczne z materiałem obrazkowym*, Wydawnictwo Akademii Pedagogiki Specjalnej, Warszawa 2013.

diagnostic trials: a preliminary assessment of the orientation and cognitive skills of the child; an assessment of the condition of speech (the ability to create and understand expressions, to evaluate dialogue, assess inflection forms, assess wordbuilding skills, assess words – their usage and comprehension and independent execution, and during repetition – assess the expression of phonemes and word structures), assessing diverse patomechanisms of speech disorders (including the capacities and tension of the articulatory organ, its structure, physical capacities in the area of the articulatory organ – breathing, biting off, biting and chewing as well as swallowing; assess hearing reaction, assessing phonematic hearing, articulation kinesthesia and word memory). Such numerous trials allow a comprehensive assessment of the linguistic functioning of a child with ID. A unique advantage of the tool is its flexibility and the ability to pick trials depending on the cognitive level of the patient.

The *Test Słownika Dziecka* [Polish for Child Vocabulary Test]²⁶, developed by Zbigniew Tarkowski, is frequently listed as a diagnostic tool. It is composed of three subtests:

- building subordinate words (with the child providing responses to questions, e. g. *What toys do you know? What colours do you know?* according to the pattern *Tell me + question*);
- defining concepts (with the child also responding to questions put to them, e. g. *What is a ball? What is milk?* according to the pattern *Tell me + question*, with the option of changing *What is...?* to *What does it mean...?*);
- creating superordinate words (the child is tasked with describing three indicated words with one word, e. g. *How would you describe a doll, a ball and a building block with one word?* according to the pattern *You certainly know that some words may be replaced by a single one, for instance: a dog, a horse, a cat are...?* If the child responds, the therapist repeats each time the command *How do you name using one word...?*).

²⁶ Z. Tarkowski, *Test Słownika Dziecka*, Wydawnictwo Fundacji „Orator”, Lublin 1999.

The entire test is based on a discussion with the child, possibly contributing to a drop in motivation during the tests. Lack of visual aids may additionally caused it to be perceived as unattractive. Children may not be eager to respond to further questions, quickly becoming distracted. They may also not understand the commands put to them, and the lack of possibility of adapting the difficulty level may prevent some trials from being executed.

Tests of nomination, comprehension, and in particular articulation correctness²⁷ may be aided by e. g. the *Kwestionariusz obrazkowy* [The image questionnaire]²⁸ and the *Test Nazywania* [The Naming Test]²⁹ by Antoni Balejko. The questionnaire is composed of a set of figures, using which the speech therapist may test the passive and active vocabulary (including the assessment of speech). *The Naming Test* in turn is a tool foreseen for diagnosing persons with various speech disorders. It is composed of a test with visual aids (subtests: showing, expressing, repeating, remembering, thinking, rhythm, drawing, figures – colours, speech – language when solving life difficulties, strings, cutting, naming – reading, minor rebus, nursery rhymes), an instruction sheet and answer sheets. As the author stresses – this tool is meant to inspire the creation of own methods that are to facilitate the sense of sight and hearing and contribute to the development of speech, reading and writing.

One of the more valuable positions for testing speech is the *100-wyrazowy Test Artykulacyjny* [Hundred-Word Articulation

²⁷ Speech therapy of children with ID should stress improvement of communication to a level allowing patients to independently cope with life, and not to develop precise pronunciation – only if a speech impediment would prevent the child with ID from communicating and if it constitutes a problem for them, the speech therapist should work on removing it (L. Bobkowicz-Lewartowska, *Niepełnosprawność intelektualna. Diagnozowanie, edukacja i wychowanie*, Wydawnictwo Harmonia Universalis, Gdańsk 2011, p. 115).

²⁸ A. Balejko, *Kwestionariusz obrazowy do badania mowy i prowadzenia terapii logopedycznej*, 5th ed., Wydawnictwo Antoni Balejko, Białystok 2017.

²⁹ A. Balejko, *Test nazywania. Diagnoza i terapia osób z zaburzeniami mowy*, Wydawnictwo Antoni Balejko, Białystok 2005.

Test]³⁰ developed by Ewa Krajna. It is the first standardised test to assess speech at pre-school age, containing comparative references. It was constructed out of image material, a textbook with a detailed manual of the test procedure and results analysis, the theoretical basis that includes standardisation procedures, and the speech assessment sheets (for qualitative and quantitative assessments). The test is the only one in Poland to contain transcriptions of phonetic script in two standards: Slavonic and IPA (the International Phonetic Alphabet). This tool is meant to be used exclusively by speech therapists. It contains a rich database allowing assessment of articulation, but primarily the vocabulary of a child with ID.

When testing articulation, it is also useful to try the *Badanie wymowy dziecka. Kwestionariusz obrazkowo-wyrazowy dla dzieci 5-letnich i starszych* [Assessment of child pronunciation. Visual-word questionnaire for five-year-old and older children] by Hanna Duda³¹. As the name suggests, the tool is dedicated for children aged five and above (with the precise age limit of patients not described precisely) and is used for the quantitative and qualitative assessment of expressed sounds both in controlled as well as spontaneous speech. The questionnaire is composed of two parts – the first contains linguistic material with sounds that the child should master until the age of five, the second contains words with all sounds of the Polish language, pronounced by the child that is five years old. On the reverse side of every sheet, the author placed suggested dialogues to be conducted with the child during the test. Thanks to this, the diagnostician may acquire a speech sample of a given sound not only in isolation, but also surrounded by other words during spontaneous speech. It is also the perfect opportunity to make a general assessment of pragmatic skills.

An amendment of the assessment conducted using the above test is the second tool developed by the same author – *Badanie kines-*

³⁰ E. Krajna, *100-wyrazowy Test Artykulacyjny*, Wydawnictwo Komlogo, Gliwice 2008.

³¹ H. Duda, *Badanie wymowy dziecka. Kwestionariusz obrazkowo-wyrazowy dla dzieci 5-letnich i starszych*, Wydawnictwo Harmonia Universalis, Gdańsk 2018.

tezji artykulacyjnej. Kwestionariusze i karty [Articulation kinaesthesia test. Questionnaires and sheets]³², which allows a detailed analysis of disturbed sound articulation in the aspect of articulation kinaesthesia. The test is also dedicated to assessing five-year-olds and older children. It is composed of visual-verbal questionnaires divided into two parts – the first concerns resonant and non-resonant sounds, and the other – oral and nasal, hard and soft sounds, which are articulated at different places, and for whom the closeness of the organs of speech is different. An integral part of the tool is the logopaedic assessment sheet, which the therapist may use to note scores. The author indicates that an assessment using this test may be conducted by a speech therapist, child psychologist, paedagogue or any other therapist. It seems quite risky, as the assessment of articulation and articulation kinaesthesia should be done exclusively by a suitably qualified specialist. This is reinforced by the fact that the test is not meant for screening but for a detailed assessment of the analysed parts of speech. It is an amendment of the detailed diagnosis of a child with ID in terms of articulation kinaesthesia, however, the verbal material it contains may prove to be too difficult, in particular for children with deeper ID.

Logopedyczny test dla dzieci i młodzieży [The logopaedic test for children and youths] developed by Iwona Michalak-Widera³³, foreseen for analysing children aged three years and over all the way to adolescence, is meant both for children developing correctly as well as for those with developmental difficulties. It is composed of visual aids testing the articulation of the key sounds of the Polish language and a speech test sheet. Of significant value is the Methodical guidebook on the usage of the speech test sheet and the visual questionnaire at the end of the work, where the author presents the full speech therapy diagnosis system, composed of: the anamnesis, the

³² H. Duda, *Badanie kinestezji artykulacyjnej. Kwestionariusze i karty*, Wydawnictwo Harmonia Universalis, Gdańsk 2017.

³³ I. Michalak-Widera *Logopedyczny test dla dzieci i młodzieży*, Wydawnictwo Unikat 2, Katowice 2009.

assessment of the structure and capacities of speech organs, the test of execution of the basic sounds in the the initial, middle and at the end of words, tests of breathing, of the speaking pace, of hearing, lateralisation, grapho-motor skills, general motor skills and the analysis of specialised test results. Regrettably, even though the author lists many aspects of diagnoses, the test itself only contains material for testing articulation, and as a result, it is not possible to conduct a full logopaedic test with its use.

In case of deeper ID, in particular significant and deep, and in compound disabilities, speech development is significantly limited, or it does not occur at all. In instances of logopaedic diagnoses of a child with ID that does not speak at all, it is important to check the level of ability to convey information and to assess pre-verbal communication. For this purpose, the speech therapist may use the *Indywidualnym arkuszem kompetencji komunikacyjnych* [Individual communication competence sheet] developed by Aleksandra Nowak and Katarzyna Kobylacka-Sikora³⁴. The questionnaire assesses the child's communication skills in five areas – pre-verbal³⁵, verbal, interpersonal, intrapsychological communication and creative expression. Each area takes into account aspects of non-verbal communication, spanning the physical appearance, body movements, gestures, facial expressions, eye movements, touch, voice and the mode of usage of the time and place in communication. Communication competences are assessed across the following ranges: emo-

³⁴ A. Nowak, A. Kobylacka-Sikora, *Indywidualny arkusz kompetencji komunikacyjnych*, <[https:// docplayer.pl/21470964-Wprowadzenie-zalozenia-teoretyczne-warunki-przeprowadzania-badania-indywidualny-arkusz-kompetencji-komunikacyjnych-iakk-literatura.html](https://docplayer.pl/21470964-Wprowadzenie-zalozenia-teoretyczne-warunki-przeprowadzania-badania-indywidualny-arkusz-kompetencji-komunikacyjnych-iakk-literatura.html)> [access: 13.11.2019].

³⁵ Pre-verbal communication is assessed on four levels, meaning: original communication – contact with the environment on the level of perception of the own body; sensory communication – contact with the environment by gestures and specific behaviour such as shouting, beating, laughter; communication on the level of behaviour organisation – contact with the environment based on the organisation of own behaviour; auditory communication – contact with the environment on the specific-visual level with use of elements of auditory speech).

tional (ability to recognise and express emotions), verbal-cognitive skills (e.g. vocabulary, mastery of grammar in speaking and writing, articulation, ability to express thoughts and to create and define concepts), and social (initiation and management of social interactions, comprehension, adherence to social rules and standards, group cooperation, taking on social roles). This tool allows the speech therapist to conduct a multi-aspect assessment of functioning of a child with ID.

The *Karty Oceny Zachowań Komunikacyjnych* [Assessment sheets for communication behaviour] by Kazimiera Krakowiak and Marii Panasiuk³⁶ are used most commonly when logopaedically diagnosing children with damaged hearing. The tool allows for an assessment of 30 categories of communication behaviour: Those related to the use of preverbal and verbal phonemic (oral), gesture and mimic signs, using the former and latter type, and the knowledge of writing. It will also prove itself when logopaedically diagnosing children with ID.

The *Ocena efektywności porozumiewania się dzieci niemówiących* [Assessment of communication efficiency in non-speaking children] by Magdalena Grycman³⁷ may also be used for children who do not speak and those with low communication competences across four levels: information transfer, statement construction, interplay with the interlocutor and general communication attitude and motivation. Thanks to this scale, the speech therapist may determine, how (and whether at all) the child is able to convey the information, whether they have the intent of communication and whether it communicates with its environment by way of specific behaviour using facial expressions or gestures. This is a necessary component of diagnosis when introducing alternative communication methods.

³⁶ K. Krakowiak, M. Panasiuk, *Umiejętności komunikacyjne dziecka z uszkodzonym słuchem. Komunikacja językowa i jej zaburzenia*, vol. 3, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 1992.

³⁷ M. Grycman, *Sprawdź, jak się porozumiewam. Ocena efektywności porozumiewania się dzieci niemówiących wraz z propozycjami strategii terapeutycznych*, 2nd ed., Wydawnictwo RCRP, Kraków 2015.

A tool used for logopaedic diagnoses of children with deeper ID is the *Kwestionariusz do badania umiejętności komunikacyjnych u dzieci głębiej upośledzonych* [Questionnaire assessing communication skills in children with deeper disabilities] (with significant and deep ID) developed by Elżbieta Maria Minczakiewicz³⁸. It may be used to assess such skills as: reactions to the own name, auditory reactions, interaction, communication of own needs and interests and properties of speech development (creation and comprehension). Each skill is scored separately. The total score allows the determination of the child's communication skill level as: very good, good, mean, weak, insufficient.

The observation sheets *Diagnoza bazowych umiejętności komunikacyjnych* [Diagnosis of basic communication skills] by Marzena Machoś³⁹ are the perfect tool for assessing skills, upon which the child builds its communication system. These sheets allow for the assessment of basic (primary) cognitive functions that constitute the foundation in the language acquisition process; these being: eye contact, following an object with the eyes, auditory attention, common field of attention, using the finger-pointing gesture, working with the hand, mimicking, imitation of primary sounds, comprehension of the statement *the same*, understanding the concept of *I* (including reacting to one's name) as well as motion, auditory and visual memory. This tool is particularly useful when diagnosing non-speaking children, including those with ID, and children with other disabilities having problems with speech acquisition. These sheets were created, as the author indicates, on the basis of development scales, object literature concerning development of small children and on the basis of own experience in work with children with communication difficulties. The detailed diagnosis of so-called

³⁸ E.M. Minczakiewicz, *Edukacyjny i pragmatyczny aspekt rozwoju komunikacji u dzieci ze sprzężonymi zaburzeniami rozwoju*, [in:] *Komunikacja, mowa, język w diagnozie i terapii zaburzeń rozwoju u dzieci i młodzieży niepełnosprawnej*, ed. by E.M. Minczakiewicz, Wydawnictwo Naukowe AP, Kraków 2001.

³⁹ M. Machoś, *Diagnoza bazowych umiejętności komunikacyjnych. Karty obserwacji*, Wydawnictwo Ergo-Sum, Bytom 2018.

basic communication skills allows for the assessment of the communication functioning of a child with ID and skilful programming of speech therapy.

Conclusions

The examples of certain tools available on the publication market may become useful both for logopaedic diagnoses of children with ID as well as find broad application in therapeutic processes, during which hypotheses put forward during the diagnostic process are verified and modified. The comprehensive diagnosis contributes to the determination of the key assumptions of the relevant therapy programme. It is a long-term activity, comprising many stages, and accordingly it should be spread out over several meetings. The diagnostic is required to have a high level of theoretical knowledge not only in speech therapy, but also basics of linguistics, psychology and paedagogy. Practical experience gained in course of daily work with patients with ID is also important. The main task of the logopaedic diagnosis is the determination of areas of deficiencies or delays, but also the discovery of the patient's strong suits, upon which the speech therapy shall be based. The diagnostic tools are an aid in the development of the key language deficiencies, but also others that accompany the core deficit. One must also consider that the juvenile period is a time, in which the development process is continuous. As a result of the stimulation and continuing development processes, landscape of the child's functioning may change over time. Even though children with ID have certain cognitive limitations, this does not mean that they cannot be successful in honing their skills.

The presented tools are foreseen for analysing selected aspects of language and communication competences. They are most commonly dedicated not only to speech therapists, but also other specialists working with the child. It must be stressed that certain diagnostic trials, specific only to speech therapy, such as the condition

and efficiency of articulation organs, the analysis of speech, of articulation kinaesthesia, should be conducted exclusively by a qualified speech deficiency therapist. Standardised tests allow for a thorough, reliable and objective assessment of speech, however, through this they introduce a certain limitation – they cannot be applied to a specific deficiency, and all trials must be conducted according to the provided instructions so that the scores could be referred to the valid norms, which in turn usually only apply to children in the development norm. Any modification of this tool is related to the possibility of emergence of boundaries in the interpretation of the achieved scores that would prevent their comparison with the norms developed for the tests⁴⁰.

In the majority of the described tools, the material is clear, easy to recognise by children with ID – it refers in most cases to specifics, and the presented objects are known to the child in the technical sense (they stem from its closest environment). Sadly, none of them tests all language capacities. The speech therapist may, however, pick and adapt individual test trials from among the available tools that would create the possibility of a comprehensive speech diagnosis of a child with ID. It must be kept in mind that the test tools must be adapted to the cognitive functioning of the patient, the level of ID and the mode of communication with its environment (verbal/ non-verbal).

The lack of diagnostic tools dedicated to children with ID contributes to the use of other tests or questionnaires developed in most cases for children without cognitive deficits, and as a result, to the diagnostic procedures being treated less rigorously, with the methods and tools being adapted to the specific deficiency⁴¹. This, however, gives rise to the fear that inappropriately selected trials may not necessarily fulfil the basic criteria of properly prepared diagnosis-

⁴⁰ E. Hornowska, *Testy psychologiczne: teoria i praktyka*, Wydawnictwo Naukowe „Scholar”, Warszawa 2009.

⁴¹ This issue is also seen for other disabilities (see E. Muzyka-Furtak, E. Haman, *Obrazkowy Test Słownikowy – Rozumienie (OTSR) w diagnostyce logopedycznej dzieci z uszkodzonym słuchem*, „Logopedia” 2014, no. 43–44).

tic tools. It thus seems necessary to develop, on the basis of models already existing, of a test foreseen for diagnosing speech deficiencies in persons with ID, an original tool that would fulfil the expectations of specialists working every day with this group of people. This is, however, not an easy task, and constitutes a challenge for the persons who would take it on. The diagnosis of communication competences of a child with ID is related to the necessity of establishing a multi-aspect tool that would take into account diverse modes of communication referring to the main spheres of the psychological functioning of the patient – language and cognitive capacities, emotional capacities and social capacities.

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