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## Detailed logopaedic diagnosis of a child affected with moderate intellectual disability as the basis for effective therapy

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Speech and language are important in the mental and emotional development of every human being. Various speech disorders that affect the daily functioning, communication and acquiring the basic human needs can disrupt the functioning of a person in society. In the case of people with intellectual disabilities, this is an oligophasia, or the speech disorder characteristic for people with reduced intellectual ability. In this article, the author draws attention to the importance of a detailed speech diagnosis, which is the basis for the later therapeutic process. He presents in on the example of a child with moderate-degree intellectual disability, using the *Afa-Skala* test, while at the same time demonstrating its usefulness in diagnosing the intellectually disabled children's language disorders. In the final part of the text the author deals with the problem of speech therapy in children with these disorders.

**KEY WORDS:** logopaedic diagnosis, oligophasia, intellectual disability, speech therapy

## Oligophasia – theoretical assumptions

The term *oligophasia* refers to speech impediments in intellectually-disabled persons<sup>1</sup>. The term has varied definitions, because the development of speech in such persons, and the accompanying disorders are difficult to pin down and diagnose, because they emerge against the backdrop of delayed speech development<sup>2</sup>. Józef Surowaniec includes oligophasia among endogenous speech development disorders, defining it as an “impairment or complete lack, or delayed development of speech related to an intellectual disability”<sup>3</sup>.

It must be noted that in children with a moderate intellectual disability<sup>4</sup> speech impediments are present. The main properties of oligophasia, related to delayed development of speech, include: incorrect and elongated articulation, the slow pace of development of the passive and active vocabulary, reduction in one’s narrative ability, difficulties in mastering the semantic-lexical subsystem and the syntactic subsystem (related to the presence of agrammatisms)<sup>5</sup>. The above symptoms are present in conjunction with disturbances of cognitive processes, including perception, thinking, attention,

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<sup>1</sup>The diagnostic criteria for intellectual disability are found in the ICD-10 International Statistical Classification of Diseases and Related Health Problems as well as the newest DSM-5 Diagnostic and Statistical Manual of Mental Disorders.

<sup>2</sup>U. Jęczeń, *Postępowanie logopedyczne w przypadkach oligofazji*, [in:] *Logopedia. Standardy postępowania logopedycznego*, ed. by S. Grabias, J. Panasiuk, T. Woźniak, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2015, p. 268.

<sup>3</sup>J. Surowaniec, *Podręczny słownik logopedyczny*, Wydawnictwo Naukowe WSP, Kraków 1993, p. 250, [as quoted in:] K. Kaczorowska-Bray, *Zaburzenia komunikacji językowej w grupie osób z niepełnosprawnością intelektualną*, [in:] *Diagnoza i terapia logopedyczna osób z niepełnosprawnością intelektualną. Teoretyczne determinanty problemu*, ed. by J.J. Bleszyński, K. Kaczorowska-Bray, Wydawnictwo Harmonia Universalis, Gdańsk 2015, p. 51.

<sup>4</sup>Moderate intellectual disability is diagnosed for an intelligence quotient in the range of 35-49 (per ICD-10) and a mental age between 6 to under 9.

<sup>5</sup>A. Rakowska, *Język-komunikacja-niepełnosprawność: wybrane zagadnienia*, Wydawnictwo Naukowe Akademii Pedagogicznej, Kraków 2003, p. 127.

memory as well as emotional and motivational processes. In this regard, the language abilities of intellectually-disabled patients take shape against the background of delays in their psycho-physical development<sup>6</sup>. As Hanna Nartowska writes, in turn, “the abilities with the highest-order levels of organisation, meaning those that are formed latest during philogenesis and ontogenesis are those that are development-delayed and impaired to the greatest extent. These are primarily thinking and speech”<sup>7</sup>.

## Communication abilities of an intellectually-disabled child

The basis for the speech therapist to commence a diagnosis is the knowledge of the theoretical issues concerning the communication abilities of the evaluated patient. Persons with a moderate-level intellectual disability, similarly to their unremarkable peers, possess the need to communicate with their environment. Moreover, the shaping of communications abilities in them follows the same pathway as in unremarkable children. The main difference, however, is the limitation of communications abilities in case of intellectually-disabled children. In these persons, speech develops with considerable delay. The individual periods of the development of speech arise at a later time, and additionally, are extended<sup>8</sup>. According to Zbigniew Tarkowski, an unremarkable child masters the basics of the language system until the end of its fourth year of age, with an intellectually disabled child babbling or remaining silent at

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<sup>6</sup>U. Jęczeń, *Postępowanie logopedyczne w przypadkach oligofazji*, [in:] *Logopedia. Standardy postępowania logopedycznego*, ed. by S. Grabias, J. Panasiuk, T. Woźniak, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2015, p. 268.

<sup>7</sup>H. Nartowska, *Opóźnienia i dysharmonie rozwoju dziecka*, Wydawnictwo WSiP, Warszawa 1980, p. 102.

<sup>8</sup>K. Kaczorowska-Bray, *Zaburzenia komunikacji językowej w grupie osób z niepełnosprawnością intelektualną*, [in:] *Diagnoza i terapia logopedyczna osób z niepełnosprawnością intelektualną. Teoretyczne determinanty problemu*, ed. by J.J. Błęszyński, K. Kaczorowska-Bray, Wydawnictwo Harmonia Universalis, Gdańsk 2015, p. 58.

this age<sup>9</sup>. Marta Bogdanowicz in turn notes that such children pronounce individual words at about five years of age, in turn building simple sentences with a high degree of agrammatisms at about seven years of age<sup>10</sup>, with their vocabulary limited, without the use of abstract terms, and with their pronunciation being flawed and unclear. All these factors hamper the contact with a disabled child. In children affected by moderate intellectual disability, the language and communications competences are quite varied – ranging from mutism to using longer sentences. In addition, revalidation as part of speech therapy in these persons may also cover alternative and supporting methods of communication (in case of a low level of language and communications competences).

### **Logopaedic diagnosis of a moderate-level intellectually disabled child – a case study**

In literature, a logopaedic diagnosis is referred to as a „set of specific rules and methods of research procedure aimed at the evaluation of the development of speech in the evaluated person, and the description of flaws present in the communication process”<sup>11</sup>. Symptoms are in the majority of cases determined based on observations, the medical interview, as well as linguistic trials and tests. Additionally taking into account supplementary examinations (e. g. audiological, phoniatic, neurological, psychological, paedagogical), an initial diagnosis is formed to evaluate the linguistic behaviour of a child.

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<sup>9</sup>Z. Tarkowski, *Mowa osób upośledzonych umysłowo i jej zaburzenia*, [in:] *Podstawy neurologopedii. Podręcznik akademicki*, ed. by T. Gałkowski, E. Szelaż, G. Jastrzębowska, Wydawnictwo Uniwersytetu Opolskiego, Opole 2005, p. 559.

<sup>10</sup>M. Bogdanowicz, *Psychologia kliniczna dziecka w wieku przedszkolnym*, Wydawnictwo WSiP, Warszawa 1985, p. 84.

<sup>11</sup>E. Czaplewska, S. Milczewski, *Diagnoza logopedyczna. Podręcznik akademicki*, Gdańskie Wydawnictwo Psychologiczne, Sopot 2012, p. 7.

The basic goal of a diagnosis within speech and language pathology is the confirmation (and subsequent detailing) or exclusion of a speech or communication impediment based on specific symptoms, the pathogenesis and the pathomechanism<sup>12</sup>.

## Characteristics of the patient

The boy was born in the year 2010 (he is presently seven years of age) in a multi-child family. He attends one of the special education preschools in the voivodeship of Łódź in Poland. In the year 2015, following a suggestion by an educational specialist from a children's community centre (the boy did not attend preschool), the mother took the boy to a consultation clinic in order to evaluate the level of development. The specialists issued an opinion about the need of special education at a special preschool. A year later, the mother again filed a motion with the evaluating committee to issue an opinion so that the child could continue its education in the present form. Based on the collected documents, the evaluating committee of the psychological and educational consultation clinic decided on the need of further special education for the time of preschool education due to a moderate-level intellectual disability.

According to the presented diagnosis, developed based on documentation from the psychological and educational consultation clinic, the boy does not understand complex commands, comprehending but simple orders that in most cases apply to situations from daily life. During the study, he felt at ease, was interested in toys, looked at items, explored his environment and reached out his hand in greeting. A markedly reduced level of social maturity is observed in him. He prefers to play alone, however, there have also emerged elements of cooperation and adaptation to requirements during group sessions. A reduced level of vision-motion coordination was also diagnosed in the patient. The development of gross

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<sup>12</sup>E. Lichota, *Terapia logopedyczna*, Wydawnictwo Difin, Warszawa 2015, p. 12.

motor skills remains without reservations (the boy imitates movements during active play to music), however, visible is a delay in the area of fine motor skills. Cognitive development is far below the norms for the age. The focus of attention on the executed activity was evaluated as correct.

In terms of speech impediments, oligophasia was determined – with active speech in the single-word phase, the statements marked by numerous instances of echolalia, errors in articulation and simplifications in consonant groups; understanding of active speech related to daily life situations is good.

The evaluating committee determined that the priorities in the development of an individual education and therapy programme would be stimulation of intellectual development and development of social abilities (including in detail: the abilities to learn by imitation, training of self-aid activities, movement towards self-sufficiency, encouragement to purposeful activities, gaining experiences, encouragement to make social contacts with peers and adults as well as the development of communication skills). The boy was recommended to attend revalidation courses including speech exercises, including to develop language competences (e. g. facilitation of phonematic hearing, shaping of articulative kinaesthesia, development of the organs of speech, shaping of command comprehension, development of the passive and active vocabulary, shaping of the understanding of prepositions related to spatial relations, shaping the ability to express oneself in sentences and shaping the comprehension of cause-and-effect relations). In addition, exercises were recommended aimed at the stimulation of general cognitive development, the expansion of the knowledge base (naming objects and colours, counting on objects, searching for similarities and differences, classifying an item according to specific properties), as well as exercises aimed at the development of cognitive curiosity and the ability to make conclusions.

As support in the development of the boy, it was suggested that he participated in specialist courses as part of psychological and educational assistance. The purposes and content of the suggested activities applied to the development of general motor coordination,

the participation in games related to balance and stimulating the awareness of one's body, developing the ability to control tension, relaxation exercises, exercises to develop manual abilities (improvements in colouring and drawing, filling specific areas of images, to making use of crayons and pencils as well as scissors), exercising memory and attention (learning poems or songs). One of the recommendations was also the use of rewards and the rule of natural consequence in the shaping of the proper behaviour of the child at home and at the preschool. The family was to receive additional aid in the area of support for the child's development, to secure for them a feeling of safety, care for the satisfaction of other emotional needs and to determine unified methods of education and upbringing.

The present form of special education at the special preschool brings positive effects in the development of the boy. It allows him to function in a small group of peers, providing chances to learn by imitation and individual activity both in the cognitive sense, as well as in the emotional and social sense (spanning making interpersonal relations, purposeful exploration and the cognition of the environment through own experiences). The boy is able to intensely develop communication abilities through speech therapy. He was also provided with help in the execution of his educational exercises. The coverage by activities from the areas of education, therapy and general upbringing, the implementation of the individual education and therapy programme and participation in revalidation and specialist courses significantly help the boy reach an optimum level of comprehensive development. They also prepare him to in the future take on his obligatory school education in a form suitable for his abilities.

## **Logopaedic examination**

The logopaedic examination presented in this article was conducted in September of 2016 (a year after the opinion was issued). In the previous schoolyear, the boy was also provided with speech therapy at the preschool.

The study was conducted using the *Afa-Skala*<sup>13</sup>, a scale used for evaluation of speech in children with aphasia, as well as individually-selected trials. The choice of the test was motivated by the will to show its usefulness for the diagnosis of speech disorders in intellectually disabled children. Presently, there is a lack of logopaedic tests aimed at children with intellectual disabilities, and one needs to use the tools available on the publishing market or create their own research tools.

The chosen test is aimed at checking the child's comprehension of individual names (nouns and verbs), the ability of the child to observe the gestures of the therapist, to understand and repeat them. Thanks to it, the ability to execute simple and complex commands could also be checked, as well as the ability to form simple sentences as well as coordinate clauses and complex clauses (with particular inclusion of the comprehension of prepositions). Analysed is also the understanding of questions – referring to specific instances or drawings, as well as abstract and more difficult names (colours and general terms). In addition, the repetition of individual sounds, syllables (primary and secondary), two-syllable and more difficult words, is diagnosed. It also enables one to check independent naming by onomatopoeic syllables, words or sentences. Analysed is the ability to construct a simple statement on a given subject, as well as the formulation of responses. The test focuses on whether the child communicates in a spontaneous manner, asking questions, formulating requests, whether it expresses its wishes, and how it conveys these.

Before commencement of the actual logopaedic evaluation, the anatomic characteristics and mobility abilities of the articulation organs is tested. Recorded was a reduced muscular tension around the articulation organs, as a result of which the boy's mouth is continuously open – for which reason the breathing pathway is incorrect.

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<sup>13</sup> A. Paluch, E. Drewniak-Wołosz, L. Mikosza, *Afa-Skala. Jak badać mowę dziecka afatycznego?*, Oficyna Wydawnicza „Impuls”, Kraków 2008.



Due to the shortcomings in understanding speech, the child was sent to a hearing test. In the meantime, supervision continued during speech therapy in order to determine the level of mastery in speech comprehension, the pace of progress and the influence of possible hearing deficiencies. The results of audiometric data clearly excluded any deficiencies in hearing – the hearing is correct.

The logopaedic examination covered an interview, initial observations concerning verbal and non-verbal communication of the child, and the modes of communication with the environment, as well as the actual analyses of the linguistic phenomena present in the child's speech (e. g. understanding, repetition, naming, speech: in dialogue, storytelling and spontaneous).

A logopaedic interview was conducted with the child's mother, who concluded that she herself did not notice the development differences comparing the boy with his peers. When asked questions concerning the speech and psychomotor development, she was reluctant to respond, repeating that she did not remember individual events. The behaviour of the mother might suggest that the situation at the boy's home is troubling. Based on information obtained at the local urban social assistance centre, one could conclude that the boy is environmentally uncared for.

Observations of spontaneous behaviour of the child did not show any warning signs. The boy played with the toys in the office. He reacted to sounds from the environment, but he did not understand all of the commands aimed at him – with the comprehension being aided by gestures and the situational context. When asked about his age, he responded stating his last name. The boy's speech often included instances of direct echolaliae. He was able to focus his sight and attention on an indicated object, and maintained eye contact with his interlocutor (although for a short while). He was keen to speak to the therapist, he was interested in the suggested activities. He frequently asked *what is it?* (Polish: *co to?*), when he noticed a new object in view.

In order to analyse the linguistic phenomena seen in the boy's speech, eight trials were made as suggested in the quoted test, use as a diagnostic tool, and two additional trials. Their descriptions are presented below.

### Trial I – spontaneous play with stuffed toys

This trial spanned spontaneous play with any stuffed toy, and was aimed at initiating contact with the child. The boy immediately made contact and was keen to commence the suggested activity. He focused his attention on the teddy bear, he took it in hand. He was able to indicate the parts of the body, e. g. the head, leg, eye, ear and nose both on himself, as well as on the stuffed toy. He imitated the activities performed by the speech therapist (yawning, repeating *a-a-a*, closing eyes, opening eyes, crying, repeating *u-u-u*, feeding, repeating individual words, giving something to drink), however, he did not comprehend all commands meant for him. He was only not able to seat the teddy bear at the table (he would put it on the table) – because the boy has difficulties with understanding prepositions and in describing spatial relations. During play, he would pronounce individual words such as: *teddy, eating, sitting, table* (Polish: *miś, je, siedzi, stolik*). He did not make use of sentences.

### Trial II – comprehension (nouns, verbs, adjectives, adverbs, numerals, pronouns)

This trial was meant to test the understanding of nouns, verbs, adjectives, adverbs, numerals and personal pronouns. The boy indicated all nouns in the presented images correctly<sup>14</sup>. He flawlessly handled the verbs as well<sup>15</sup>. Adjectives presented a problem to him, he indicated correctly only the *sad* and the *happy* girl. However, he was not able to recognise in the images, which item is *small*, and which one is *big*. He used the descriptors *old-new* erroneously. He did not know the meanings of the adverbs *near* and *far*. He also did

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<sup>14</sup>The images contained the following: *a house, a doll, a dog, an eye, ice-cream, a car, shoes, a fish, a frog, a wardrobe, a pram, a clock, a ball, a mug, a sleigh, a stork, a spade, a lamp, buttons, butterflies, a fir tree, a plane, a ladder, scissors*.

<sup>15</sup>*Eating (candy), reading (a book), cooking (soup), sitting (in an armchair), cutting out (a teddy bear), swimming (in a pool)*.

not correctly indicate, where *one* pencil was lying, and where *two* pencils were shown (proof of his poor vocabulary in terms of numerical terms). He correctly used the personal pronouns *he* and *she*.

### Trial III – naming (nouns, verbs, adjectives, adverbs, numerals, pronouns)

Naming was tested based on the same visual aids. The task of the child spanned naming the pictures it was shown – hence, tested were the ability to name and the child’s vocabulary. Naming was not fully mastered by the evaluated child. The boy correctly indicated most nouns, with the only ones causing him problems were *sledge*, *stork*, *shovel*, *lamp*, *ladder* (he referred to these, respectively, *sledg*<sup>16a</sup>, *giraffe*, *hammer*, *światelko*, *deska*) – he indicated them after pronouncing their names. Naming activities did not cause him problems. When naming adjectives, he did not name the properties of a wheel (*large*, *small*). He also was not able to appropriately describe a shoe as *old* (he used the term *shoe damaged*<sup>17b</sup>) and *new* (he used the adjective *pink* – however, wrongly describing the colour, because the shoe shown was brown). He also failed to master adverbs – base on a picture he was shown, he was unable to finish the sentence *This boy’s home is...* – he only used the words *home* and *boy*. Having been guided and explained the meaning of adverbs, he still did neither named nor indicated correctly the terms *far* and *near*. He referred to the *sad* and *happy* girl respectively as *behaving badly* and *behaving well*<sup>18c</sup>. He replaced personal pronouns with the nouns *boy* and *girl*

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<sup>16a</sup> The Polish term for sledge is *sanki*, a singular noun that has a plural form. When asked to name the sledge, the boy used the term *sanek*, which would be the singular form, if one were to consider *sanki* the plural form of a regular noun that also has its respective singular form [all footnotes indicated by letters stem from the translator].

<sup>b</sup> In Polish, the boy used the phrase *but popsuto*, which is grammatically incorrect.

<sup>c</sup> Note that these phrases are simpler in Polish, being *niegrzeczna* and *grzeczna*, respectively.

(despite having indicated them correctly in the comprehension test). When asked, how many pencils does he see in the picture, he responded – *pencils*. He was unable to initiate counting on his own, however, with the aid of the therapist he was able to count to three.

#### **Trial IV – colour names**

The trial pertained to the ability to name colours. The boy failed to correctly recognise any colour, he indicated and referred to them at random<sup>19</sup>.

#### **Trial V – repeating (isolated sounds, syllables, words)**

This trial spanned repeating isolated, individual sounds, syllables and words. The boy correctly repeated all vowels and consonants (*a, u, i, p, m, t, l, s, n, k*), syllables (*ma, pi, be, fu, wy, no, ta, da, su, ha, nia, ko, ci, am, ok, an, ap, as, al, ar*) and words (*baba, niebo, waga, lasy, koty, czekolada, telefon*). He in turn failed to correctly pronounce the words *wiaderko, drabina, kanapa, podłoga, parasol, dzwonek, grzebień, lokomotywa* (respectively *wiadelko, dlabina, kamapa, potoga, palasol, dzłonek, gsebień, lokomotyła*)<sup>20d</sup>. Visible is thus wrong realisation of the sound *r* (as *l*), a change of *m* to *n*, simplifications of consonants (*potoga*), and wrong realisation of the labiodental sound *w* (substitution *w > ł*).

#### **Trial VI – command comprehension**

This trial concerned the understanding of simple and complex commands. The boy understood and executed simple commands

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<sup>19</sup>The following colours were presented to the child: *yellow, white, blue, red, black, green, grey, pink, brown, orange, violet*.

<sup>d</sup> Respectively: *little bucket, ladder, couch, floor, umbrella, bell, comb, locomotive*.

such as: *get up, raise your hand* (when asked to raise a specific hand, he had difficulty describing the right and left sides), *stomp your foot, show your eye, grab your ear, take the teddy bear and the doll in hand, touch the teddy with the spoon*. Complex commands, however, were incomprehensible to him. He did not fulfil the tasks *give me the teddy bear, and put the doll on the table* (he only put the doll on the table), *take the spoon and put the doll by the side* (he only took the spoon), *put the teddy under the table* (he put it on the table).

### **Trial VII – sentence comprehension, active speech – situational picture “The beach”**

During the trial, tested was the ability to understand sentences. The investigated child correctly indicated who is carrying ice-cream, who is building a castle, and what the mother is wearing on her head. He was unable to show, what is lying beside the beach chair or who is sitting under the umbrella. This was related to him not understanding commands containing pronouns, with which he has a problem. When asked questions concerning situations shown in the picture, he would respond with a single word, e. g. *siedzi, idzie*<sup>e</sup> or incorrectly (what is the child doing? – response: *sand*, what is the seagull doing? – response: *seagull*). He was unable to describe the place shown in the picture. To the questions *what do you like playing with?* and *would you like to go visit the sea?* he responded with direct echolalia or off topic (*Yesterday I was. To play. Mum is. Sitting.*).

### **Trial VIII – active speech**

The trial analysed active speech. The boy was presented with four pictures. The speech therapist indicated the first image in the story,

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<sup>e</sup> In Polish, the form of the verb (like in this example – the English equivalents would be *he/she/it is sitting, he/she/it is walking*) indicates exactly the person and number that the verb corresponds to (in this case it is the third person singular).

and it was the task of the child to indicate the chronology of events and to tell the picture story. The child was unable to execute this task even after being guided by supporting questions. Hence, the simplest form of the task was used – the pictures were strewn randomly across the table, and the child was asked to indicate the relevant picture having heard the descriptive sentence (e. g. *Mum, dad and the children are driving to the forest*). The evaluated child correctly indicated all the pictures, however, failing to note the cause-and-effect relationship between each of them. He was unable to describe the pictures himself – he only used single nouns, such as: *mum, dad, car*.

## Additional evaluation trials

### Trial IX – grammar skills

Grammar skills were tested based on noun declination. The evaluated child was presented with pictures, with the pictured objects named, and then the image was covered. The child was required to respond to the question *what is missing?* The trial tested the ability to inflect words. The boy had not mastered this ability, with most words being inflected erroneously or not at all (e. g. *piłka* – nie ma *piłk*, *sanki* – nie ma *sank*, *lala* – nie ma *lala*, *auto* – nie ma *auto*)<sup>21f</sup>. The boy had also not mastered the formation of the plural (e. g. *auto* – dwa *auta*, etc.). In spontaneous speech, there are numerous agrammatisms.

### Trial X – auditory perception

The analysed patient reacts to sounds, keenly listens to ambient noises. He recognises most of the presented sounds, he is able to

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<sup>f</sup> Polish is a heavily inflected language, and the words, if inflected correctly, should receive specific word endings according to the relevant case (in this case it is the genitive, and these would be: *piłka* – *piłki* (ball – there is no ball, and so forth), *sanki* – *sanek*, *lala* – *lala*, *auto* – *auta*).

differentiate between them and point to their location. He does not understand, what is a loud or a quiet sound, what is a quick or a slow sound (he is also unable to indicate the symbols for these properties of sounds). He does not remember any of the vowels that are pronounced<sup>22</sup>. He only remembered one syllable from three<sup>23</sup> and one word from three<sup>24</sup>. He is able to imitate by knocking a simple rhythm given by the therapist.

Based on the collected documentation, and additionally taking into account the results of additional tests and the speech studies evaluation that spanned the interview, initial observations concerning the child's verbal and non-verbal communication, the modes of communication with the environment as well as the proper speech studies examination by way of the test, an initial logopaedic diagnosis was made – speech impediment in the form of oligophasia.

## Speech therapy

Following a detailed logopaedic diagnosis, the time of execution of which cannot be defined exactly (because it needs to be individually adapted to the needs of each patient), the speech therapist should commence the creation of the speech therapy. It needs to be remembered that “any approach to an evaluation [and later therapy] of an intellectual disability is required if it brings something new to the pool of knowledge about this disability”<sup>25</sup>. Hence, a detailed logopaedic diagnosis that would permit the speech therapist notice the most of the faults and difficulties, on which he will be able to work, is so important. Important is also the positive diagnosis, thanks to which the strengths of the patient and the abilities that

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<sup>22</sup> These were the vowels: *a, o, e* and *u*.

<sup>23</sup> These syllables are: *ma, pi, be, fu*.

<sup>24</sup> These were the words: *dom, lala, buty* (*a house, a doll, shoes*).

<sup>25</sup> S. Kowalik, *Upośledzenie umysłowe. Teoria i praktyka rehabilitacji*, Wydawnictwo Naukowe PWN, Warszawa-Poznań 1989.

suffer from the least disabilities, can be described, that will constitute the foundation in the subsequent therapeutic process<sup>26</sup>.

Speech and language have an important influence on the mental and emotional development of man. Various kinds of speech impediments that hamper the day-to-day functioning of the child, their communication and the satisfaction of basic needs, contribute to disturbances in social functioning. In addition, limitations of the vocabulary of abstract terms causes a reduction of the ability to function in life. Hence, speech therapy for any patient with an intellectual disability should be part of a general plan of exercises strengthening cognitive functions<sup>27</sup>. The most important aspect of speech therapy is not working on the correct articulation of speech – attention has to be paid on building language and communication competence that will be an important component in the subsequent functioning of the patient<sup>28</sup>.

Speech therapy in intellectually disabled children, as noted by Urszula Jęczeń, is a long-term process, because speech impediments like oligophasia are often complicated and multi-layered in character<sup>29</sup>. It is a slow process that can be effective to varying degrees<sup>30</sup>.

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<sup>26</sup> A. Rakowska, *Język-komunikacja-niepełnosprawność: wybrane zagadnienia*, Wydawnictwo Naukowe Akademii Pedagogicznej, Kraków 2003, p. 135.

<sup>27</sup> M. Fawcus, *Zaburzenia mowy w niedorozwoju umysłowym i ich leczenie*, [in:] Ann M. Clarke, A.D.B. Clarke, *Upośledzenie umysłowe. Nowe poglądy*, Państwowe Wydawnictwo Naukowe, Warszawa 1971, p. 457.

<sup>28</sup> The hierarchy of importance in speech therapy was handled by Urszula Jęczeń (2015) in her work *Postępowanie logopedyczne w przypadkach oligofazji* and Małgorzata Młynarska (2002) in her work *Mów, Piotrek! Rozwijanie ustnej komunikacji językowej metodą psychostymulacyjną u dziecka z Zespołem Downa*. The authors noted that the development of the communicative aspect of speech and the enrichment of its meaning is much more important than working on correct articulation.

<sup>29</sup> U. Jęczeń, *Postępowanie logopedyczne w przypadkach oligofazji*, [in:] *Logopedia. Standardy postępowania logopedycznego*, ed. by S. Grabias, J. Panasiuk, T. Woźniak, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2015, p. 276.

<sup>30</sup> E.M. Minczakiewicz, *Jak pomóc w rozwoju dziecka z zespołem Downa. Poradnik dla rodziców i opiekunów*, Wydawnictwo Naukowe Uniwersytetu Pedagogicznego, Kraków 2001, p. 56.



In this regard, it required patience both from the therapist as well as from the patient himself.

The enormous role of the family in the process of revalidation of an intellectually-disabled child cannot be forgotten. Good contact and a family atmosphere facilitating development contribute to better progress in terms of the psychological and physical development of the child. In conjunction with cooperation with specialists, much better results can be achieved.

Language and communication abilities and competences should be developed both at home as well as at the preschool. Continued stimulation enables an increase of one's intellectual abilities. Learning to communicate should be based on direct experiences that are regularly recalled and remembered. The shaping of proper communication and simultaneous development of cognitive processes are basic components that should be taken into account by the speech therapist during the establishment of an individual therapy.

Following a precise logopaedic diagnosis, discerning the difficulties in the functioning of the child, the described patient can be provided with the following suggestions of exercises that constitute a multi-complex therapy:

1. Exercises in language competences (shaping the ability to express oneself in sentences, exercises encouraging making relations, developing communication skills).
2. Exercises in speech comprehension (including simple and complex orders for the child).
3. Development of the passive and active vocabulary (introducing names of objects, phenomena, properties, activities, spatial and temporal relations, precise indication of meanings of words, topical grouping and arrangement of antonyms, learning to understand and use adjectives, adverbs, numerals and pronouns).
4. Exercises in the grammar of speech (exercises spanning two-component statements, exercises in forming simple sentences, etc.)
5. Development of hearing perception and shaping hearing sensitivity (recognition, differentiating sounds from the envi-

- ronment, exercises of phonematic hearing, exercises in sound memory).
6. Development of spatial orientation (learning one's own body's layout, exercises in spatial relations, learning the meaning of prepositional phrases, and starting to use them in statements).
  7. Exercises in cause-and-effect thinking (describing relations between phenomena, indicating the essence of a specific event, formulating conclusions about the surrounding reality).
  8. Exercises in classification and categorisation (learning to understand the relationship between the part and the whole, relations between superordinate and subordinate terms, joining objects into classes, groups, categories).
  9. Learning global reading - irrespective of the age and level of damage to the brain, the child should learn to read so as to intensely stimulate all senses<sup>31</sup>.
  10. Development of visual perception (comparing, differentiating, creating a whole from a part, exercises of visual memory).
  11. Developing motor skills (perfecting vision-motion coordination, manual dexterity, visual-audial-motion coordination).
  12. Development of articulation skills (improving the abilities of articulation organs, articulation kinaesthesia, work on correct breathing, the strength and modulation of the voice).
  13. Shaping correct articulation of sounds (recognition, emphasis, correct repetition).
  14. Exercises of attention and memory.
  15. General development exercises (stimulation of intellectual development).

It is a therapeutic success to work out good relations with the child so that it feels as natural and free during speech therapy as possible. Beside individual courses, the child should be encouraged to participate in additional group therapy that will enable them to shape their ability to cooperate and integrate with others.

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<sup>31</sup>A. Rakowska, *Język-komunikacja-niepełnosprawność: wybrane zagadnienia*, Wydawnictwo Naukowe Akademii Pedagogicznej, Kraków 2003, p. 132.

## Conclusions

The precise analysis of the submitted documentation, observation of spontaneous behaviour of the child, the interview with the caretaker, consideration of the results of additional trials and the detailed logopaedic evaluation permitted the development of a precise therapeutic plan that was focused on the development of the disturbed functions based on the child's strong suits (e. g. willingness to cooperate, good attention focus, understanding of active speech related to everyday situations). Correctly chosen exercises permitted the facilitation of the therapeutic process and achievement of the expected results in a significantly shorter time frame. After a year of therapy, the boy had improved his articulation organs, thanks to which his speech has become clearer. Understanding of speech also improved – the boy understands most simple commands, and he is able to deal with complex commands much better. He uses simple sentences, however his speech still includes a large number of incorrect grammatical forms. His vocabulary includes a greater number of adjectives and adverbs, although he does not always understand their meanings. He continues to have trouble describing relations between phenomena, with classification and categorisation. He is able to read simple nouns, such as *dom*, *auto*, *lala*, *mama*, *tata*, *babcia*, *dziadek*, *buty*. His speech still has errors in articulation, but their elimination was not the basic objective of the planned therapy.

The *Afa-Skala* aphasia evaluation test had proven itself in diagnosing speech deficiencies in an intellectually disabled child – thanks to it, it was possible to evaluate the most important aspects, with other abilities subjected to diagnosis using additional research trials.

Based on a comparative analysis with earlier results of psychological and paedagogical trials as well as trials within speech therapy, significant progress was observed in the development of communications, cognitive as well as emotional and social skills. This brings hope of continued positive development of the child, and provides it with chances of attending compulsory education adapted to its cognitive abilities.

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