

**"ION CREANGĂ" STATE PEDAGOGICAL UNIVERSITY, CHIȘINĂU**

By title of manuscript  
C.Z.U.: 373.2.015.3:376.36(043.2)

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**PSYCHOLOGICAL AND SPEECH THERAPY CONFLUENCES IN THE  
RECOVERY OF PHONOLOGICAL LANGUAGE DISORDERS IN  
PRESCHOOLERS**

**Specialty 511.06 - Special psychology**

**Abstract of PhD thesis in psychology**

**CHIȘINĂU, 2022**

The thesis was developed within the Doctoral School of Psychology of the "Ion Creangă" State Pedagogical University

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The defense will take place on December 16, 2022 in the meeting of the Doctoral Commission of the Doctoral School of Psychology of UPSC "Ion Creanga" (Ion Creangă Street, 1, block 2, Senate Hall).

The doctoral thesis in psychology and the abstract can be consulted at the Scientific Library of the "Ion Creangă" State Pedagogical University of Chişinău and on the ANACEC website ([www.cnaa.md](http://www.cnaa.md)).

The abstract was sent on 15<sup>th</sup> of November 2022

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## CONCEPTUAL RESEARCH MILESTONES

**Topicality of the theme.** The pre-school period is rightly considered the "golden period" in child development, because it is marked by the moment of its potential success. The linguistic thesaurus is developed during ontogenesis through the gradual internalization of the objective structures of the language, which includes not only correct pronunciation, but also the development of an elevated language at the lexical, semantic, syntactic, pragmatic level - skills acquired gradually, throughout the pre-school educational process (continuing into schooling), reaching its peak with literacy and the acquisition of read-written language - the valences of which open new horizons of development and social integration Raku J. [24], Măța L. [12]. The Logos was and will always remain the intellectual expression of consciousness. As Piaget and Vygotsky state, with the assimilation of language, self-awareness is formed – the dividing line between oneself and others. Language acquisition [V.Olărescu 16], is one of the most complex activities, because it involves a multitude of imported cognitive processes: language, attention, memory, visual processing of graphic symbols, as well as phonological processing. And, as a negative effect, language and communication disorders can emerge during this period. From the perspective of children with language disorders, the theory of stadiality [22], is disturbed, they encountering obstacles and restraints in the consecutiveness of language acquisitions, a fact that has aroused the interest of many researchers, being analyzed from different angles: C. Păunescu [21] , N. Bucun [4], M. Guțu [11], E. Verza [30], V. Olărescu [13,14,15,16,17,18,19], A. Cucur [9], C. Bodea Hațegan [3].

### **Description of the situation in the research field and identification of the research problem.**

Language disorders are reflected in the literature, called speech-language science, through research conducted by authors from different investigative perspectives (linguistics - C. Chomsky [32]; neurolinguistics - A. P. Лурия [40]; psychological - N.Bucun [4], J.Racu [24], A. A. ЛЕОНТЬЕВ [39]; logopedic - V. Olărescu-[16,17], V. Rusnac [25], A. Cucur [9], and the relevant bodies, permanently and continuously, evaluate and re-evaluate the national educational policies, normative acts regulating psychological and speech therapy assistance to children with special educational needs, including children with language disorders, are developed: Education Code of the Republic of Moldova No. 152 from 17 July 2014 (Official Monitor of the Republic of Moldova from 24.10.2014; Methodological guidelines on the work of speech therapists in general education institutions, approved by Order of the Minister of Education, Culture and Research, No. 01 from 02.01.2018). However, the increase from year to year in the number of children with language

disorders, the negative impact of language disorders on the child's psycho-socio-pedagogical and somatic development (inferiority complexes, cognitive insufficiency, emotional instability, isolation, anxiety, general skills and low specific, etc.) [16], the transference of language disorders on academic success, the lack of a program for the remediation of phonological disorders for the development of phonological awareness in preschoolers at the national level, outlined the acute **scientific problem**, which requires an in-depth study namely: *How would it be most effective to remediate phonological disorder in 6-7 year old preschoolers, through which strategies, which would be most useful, so that we can include the other psychological aspects affected?* **The purpose of the research:** Recovery/remediation of the phonological disorder by applying the integrative psychopedagogic program, with repercussion/impact/influence on language, cognitive, emotional processes, self-esteem and formation/education of the prerequisites for writing-reading, in preschool children aged 6-7 years.

**Research objectives:**

- in-depth study of the scientific literature in the field and description, synthesis of the scientific data analysed;
- structuring evaluation tools;
- highlighting/distinguishing the particularities of phonological disorder and gender differences in the manifestation of phonological disorder in pre-school children;
- Identifying the level of development of cognitive processes (memory and attention), emotional processes, cognitive behaviour, self-appreciation, prerequisites for writing-reading in preschool children with phonological disorder and typical development;
- Establishing correlations between phonological disorder and psychological age of language (PAL), cognitive and emotional processes, cognitive behaviour, self-appreciation; prerequisites for writing-reading development in preschoolers with phonological disorder and typical development;
- development and implementation of an integrative psycho-linguistic programme to remedy phonological disorder;
- experimental approval and impact evaluation of the integrative intervention;
- issuing recommendations to professionals on early remediation of phonological disorders in pre-school children.

**The theoretical support of the research** is represented by the theories and conceptions regarding: *language and communication* Л.С. Vygotsky [35], J.Racu [24], U.Şchiopu [27], Slama-Cazacu, T [26]; *language disorders and phonological deficits* E.Verza [30], C.Păunescu [21], M.Guțu [11], N.Bucun [4], E.Vrăsmaș [32], V.Olărescu [13,14,15 ,16,17,18,19], *theories of language acquisition* R. Iakobson [34], Л.Выготский [36]; *conceptions of psychic development* Fivush, Nelson and Gruedel [35], Kornilov [39], Ivanov [38].

**Scientific research methodology:** *theoretical methods* - the study of specialized literature; *empirical methods* – tests, assays, speech therapy record, ascertainment and control experiments, psychopediatric interventions; *statistical methods* - calculation of *frequencies* (distribution of results), *descriptive statistics* (indicators of central tendency, standard deviation, skewness, skewness), *chi-square test* (difference between frequencies), *U Mann-Whitney* (comparison of independent samples), *r biserial* indicator (size effect), the *Spearman correlation* test and the *Wilcoxon* test (comparison of paired samples).

**Scientific novelty and originality.** For the first time, at the national level, an experimental comparative study of 6-7-year-old preschool children with phonological disorder and typical development was carried out, from the perspective of identifying the correlation between phonological disorder and other linguistic aspects, cognitive and emotional processes, and self-perception ; of gender differences in the manifestation of phonological disorder; conceptualized own definition of phonological disorder; an evaluation kit was structured for language, cognitive, emotional and self-assessment processes; the integrative psycho-linguistic program aimed at the remedy of the phonological disorder was implemented in parallel with the education of reading-writing premises, the development of cognitive, emotional and self-esteem processes.

**The obtained results that contribute to the solution of the important scientific problem consist in:** the scientific systematization of the data from field research, the *identification* (strong/weak points), of the particularities of the *development* of phonological processing skills - pre-acquisitions/essential skills in the evolution of the mental processes of preschoolers of 6-7 years; *remediation* of phonological disorders through the *development* and *application* of an integrative psycho-logopedic program, *directed* on language disorders, cognitive and emotional processes, self-assessment of preschoolers with phonological disorders.

**Theoretical significance:** the research carried out contributes to supplementing the theoretical background of the psychological and speech-language sciences with information referring to the phonological/meta-linguistic aspect of language development in preschoolers; the integrative psycho-logopedic program represents a theoretical benchmark in the action of mental stimulation/development of the preschool child.

**The application value of the work** consists in: structuring of Preschool Assessment Kit, useful in the quick and accurate complex examination of 6-7 year old preschoolers; the elaborated, implemented and validated integrative psycho-logopedic program, oriented towards the remedy of phonological disorders by considering other aspects of language, cognitive, emotional processes and self-esteem of preschoolers with phonological disorder, can be taken over by specialists in early education and by parents; the psycho-linguistic integrative program can also be used as part

of school preparation programs for preschoolers or first graders; theoretical and practical data and research conclusions can be sources of documentation for specialists (speech therapists, psychologists, educators), parents; can compile a best practice guide for specialists.

**Main scientific results submitted in support:** The complexity of the phonological disorder involves distortion of the processes of encoding and decoding of phonemes, and the distorted phonological awareness has repercussions on the child's literacy and extends the whole linguistic system; The statistical data obtained, following the evaluation of the phonological disorder and the identification of correlations between the *phonological disorder* and other *linguistic aspects, cognitive and emotional processes, cognitive behaviour, self-appreciation, prerequisites for writing-reading*, require the development of an integrative psycho-linguistic programme to remedy the phonological disorder; The development of an integrative psycho-linguistic programme, structured in modules (*Phonological Awareness; Cognitive Behaviour; Cognitive; Socio-emotional*) and its early implementation will remedy not only deviations in language development (phonological disorder) but also related psycho-linguistic processes.

**Implementation of scientific results.** The resulting materials are used in the psycho-therapeutic process at pre-school level; in the process of continuous and complementary training of psychologists and speech therapists; they are recommended in the courses Special Psychology, Speech Therapy, Speech Therapy Assistance, for the training of students in special psycho-pedagogy and master students in speech therapy in UPS "Ion Creangă".

**Approval of research results.** The results of the research have been approved during the meetings of the Department of Special Psycho-pedagogy of UPS "Ion Creanga" from Chisinau, valorized in scientific conferences organized in UPS "Ion Creanga", Educational Center "Leader Land", Medical Complex Neurlogy and Pediatrics "Doctor Coropceanu" and in seminars, workshops organized in educational institutions: Conference of PhD students and Scientific Annuals of PhD students and competitors of the State Pedagogical University "Ion Creanga" from Chişinău, 2017 *Early recovery of phonological language disorder*; International Scientific Conference "Speech therapy assistance: actuality and horizons", UPS "Ion Creangă", 22 and 23 November 2018. *Psychological and speech therapy confluences in the recovery of phonological language disorder in preschoolers*; Symposium with international participation "School – the main means of preserving the freedom of the soul in the oppressed environment"; UB "V.Aleksandri", Bacău, 2018. *Recovery of functional dyslalia through art therapy techniques*; Conference of doctoral students and postdoctoral students from the "Ion Creangă" State Pedagogical University from Chişinău, 16 May 2019. *Directions for early intervention in the development of phonological processing skills in preschoolers*; Conference of doctoral students

and postdoctoral students from the "Ion Creangă" State Pedagogical University from Chişinău, 18 May 2021. *Phonological Awareness – Early Indicator of Learning Disabilities*; IŞE international scientific conference "Ascensions, achievements, personalities" 10 December 2021. *Components of language and phonological awareness; Identification of Dyslexic-Dysgraphic Predispositions in Preschoolers 6-7 Years Old*. In: Collection of scientific papers and materials of scientific and practical conferences, nr.2, Academy of Social Management, Moskow, 2022.

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Articles: Correlation Between Phonological Language Disorder and Cognitive Processes in Preschoolers. In: *Univers Pedagogic Magazine, no.1, IŞE, 2022*; Phonological awareness in the context of language development and communication. (coautor). In: *Univers Pedagogic magazine, no.1, IŞE, 2022*; Evaluating and educating the prerequisites for writing-reading through psycho-speech strategies in preschoolers. În: *Univers Pedagogic, nr.4, IŞE, 2022*; Psycho-Logopedic Perspectives on Writing Reading Premises of Preschoolers. În: *Journal of Innovation in Psychology, Education and Didactics. Nr.1 (26). 2022.Bacău, Romania*.

**Publications on the topic of the thesis:** 12 scientific papers, of which: 1 scientific-methodological paper; 2 articles in international scientific journals, 4 articles in scientific journals: 5 articles conference proceedings and other scientific events

**The volume and structure of the thesis.** The thesis includes annotations, list of abbreviations, introduction, three chapters, general conclusions and recommendations, bibliography of 218 titles, 4 appendices, 134 pages of basic text, 32 figures and 35 tables.

**Keywords:** language remediation, language underdevelopment, phonological disorder, integrative psycho-logopedic program, cognitive behavior, phonological awareness, linguistic aspects, memory, attention, psychological aspect of language.

## THESIS CONTENT

The **Introduction** argues the topicality and importance of the research topic, the important scientific problem solved, the aim and objectives of the investigation, the scientific novelty and originality, the theoretical significance and applicative value of the work, the implementation of the results and the approval of the research results, the implementation and approval of the scientific results are presented. In Chapter 1, entitled Scientific confluences in the analytical study of language disorders in preschoolers, we talk about the models and theories of language acquisition, an interdisciplinary field of research, which aim to describe and understand the way in which the child acquires language, verbal or written language, how he perceives and knows the

environment around him; reports on the development of language in ontogenesis, as well as the history of the evolution of language disorders, the diagnostic criteria gathered in the diagnostic manuals ICD-10, DSM-IV; as well as the specificity of the mental development of preschoolers with language disorders, the specialized literature in the studied field being examined. Allen and Burren believe that language acquisition is controlled by the conditions in which it takes place, and that as long as people are in the same conditions, they will learn in the same way. The subject of language acquisition by children has been the focus of many researchers B. Skinner, L.S.[42], L.Vygotsky [36], N.Chomsky [33], J.Piaget [22], T.Slama-Cazacu [26], A.B.Запорожец [37], Ф.А.Сохин [43] etc., a fact that also generated serious contradictions referring to the development of speech mechanisms. Its essence lies in the fact that today it is quite difficult to give a unanimous answer regarding the origin of spoken language - is it born or is it formed during ontogenesis.

Pinker [apud 20] shows that every child is "prepared for language", gradually develops both the ability to understand what is said to him and to realize it, but the biological potential of the child must be stimulated both qualitatively and quantitatively by the environment in which it develops. D. Panțâru [20] mentions that the language components develop at their own and specific pace, and before any word is understood at a higher level, it must be decoded at the phonological level. Phonology constitutes the notes (consonants, vowels and syllables), measures (words and phrases) and melody (rhythm and prosody) of linguistic song, mental representation, awareness of the categories, patterns, rules and constraints of human sound systems and the specific characteristics of spoken language; in other words, phonology includes broader aspects of speech production and speech perception, along with cognitive-linguistic aspects of the speech sound system.

Both phonological and phonemic awareness focus on differentiating the sounds that make up words. The difference is in phonological abilities to combine phonemes in the word with implications for meaning, while phonemic processing abilities manipulate phonemes, thus focusing attention on the discriminative function of the phoneme, especially in minimal-pair linguistic structures [3]. The typical development of the language, within the limits of scientifically established standards, usually enjoys and the psycho-physical development of the child evolves positively. Through the prism of negative dynamics in language development, deviations occur that require intervention, sometimes long-lasting. Psychological and speech therapy confluences can generate deviations in the development of language such as phonological disorders, but they can influence their remedy, if the psychopedic intervention is carried out on time, is logically structured taking into account the age specificities of the language and the current level at which it is developed.



The disorders that occur at the phonological and phonemic level are interpreted differently by researchers: E. Verza [30], Guțu [11], M. Anca [1], G. Burlea [6,7], C. Bodea Hațegan [3 ], V.Olarescu [13,14,15,16,17,18,19], D.Buganu [5], however, they converge and evoke the importance of the early development of the ability of phonological awareness.

Existing scientific studies are conducted from isolated perspectives, on narrow areas. Language, whether it is analyzed through the lens of development as a mental process in accordance with chronological age (CA), either from the linguistic and psycholinguistic perspective, or from the speech therapy perspective, highlighting language disorders in correlation with the mechanisms of their appearance (etiopathogenesis of language disorders) , and practically, I have not found any studies in which the phonological disorder of the language is comprehensively addressed - psychologically and speech therapy, including all the components of phonological processing: phonemic awareness, rhythm awareness, syllable awareness, word awareness, announcement awareness, phoneme awareness), on one part - in relation to cognitive (attention, memory) and emotional (anxiety) mental processes; the level of self-appreciation; the ratio of psychological age of language and chronological age; the identification of dyslexographic predispositions, and, on the other hand - the study should be comparative, involving preschoolers with phonological disorders and with typical development of the same age, which is what we intended to achieve.

In Chapter 2, entitled Distinctive characteristics in the mental development of preschoolers with phonological disorder and typical development, the objective, hypotheses, research methodology are presented and the results of the ascertainment experiment are presented, in which participated 80 preschool children, aged 6-6,5 years old with phonological disorder and typical development (PD/TD).

**The purpose** for the ascertainment stage: identifying the characteristics of phonological awareness, the level of language and mental processes development, including cognitive behavior, self-appreciation, the prerequisites for reading and writing in preschool children with PD and TD.

**Objectives** of the finding experiment: Selection of children with PD among children with TD; Evaluation of phonological awareness in preschool children with PD and TD; Determination of psychological age of language in preschool children with PD and TD; Evaluation of the development of prerequisites for writing-reading, cognitive processes (attention, memory), cognitive behavior, self-appreciation, emotional background (anxiety) in preschool children with PD and TD; Establishment of existing correlations between the investigated variables; Processing and interpretation of the obtained results; Extraction of scientific conclusions.

**Hypothesis** of the finding phase: we assume that preschoolers with PD will show deviations from age norms on the dimensions of language (oral-written), cognitive processes, emotional, cognitive behavior, self-appreciation in relation to preschoolers with TD of the same age.

From the general hypothesis, **operational hypotheses** emerged, whereby we assume that: 1. Phonological awareness, through all its components, will be insufficiently developed in preschool children with PD, and that the very presence of PD, would cause chain dysfunctions, not specific to peers with TD; 2. From the perspective of the psychological age of language, there will be significant differences between preschoolers with PD and with TD in relation to chronological age; 3. We will note the underdevelopment of the prerequisites to writing-reading (below the threshold) in preschoolers with PD compared to TD; 4. Mental processes (attention and memory) will be underdeveloped in preschoolers with PD compared to preschoolers with TD and statistically there will be differences; 5. Cognitive behaviour, through intellectual abilities/competencies, will be slightly nuanced/marked by the PD present in preschoolers, at a time insignificant in those with TD; 6. We will attest statistically significant differences, between preschoolers with PD compared to TD, in the self-assessment dimension; 7. Preschoolers with PD will be characterized by a high/low level of anxiety compared to preschoolers with TD; 8. Significant correlations will be established between the variables investigated in both samples of preschool children: PD will correlate with all investigated dimensions.

**Experimental variables.** *Independent variable* – Phonological disorder. *Dependent variables* – Development of phonological awareness; PAL; prerequisites for writing-reading; development of cognitive mental processes (attention, memory), cognitive behaviour, level of self-appreciation; emotional manifestations expressed as anxiety.

**Diagnostic tools used in the finding experiment:** *Speech therapy sheet, Phonological Awareness Method, Psychological Age of Language Test, Active Burlea Test, Visual Memory Test, Visual Attention Test, Preschool Children's Cognitive Behavior Assay, Anxiety Test, Staircase Test.*

#### **Presentation and interpretation of experimental results**

Based on the estimated diagnosis and recorded in the speech therapy record of each child in early education institutions, 80 preschoolers with phonological disorders (PD) were selected.

#### **Results of the Phonological Awareness method.**

*Working hypothesis:* Phonological awareness, across all its components, will be underdeveloped in preschoolers with PD; There are differences between preschoolers with PD and preschoolers with TD in phonological awareness.

The method revealed differential aspects between the groups of preschoolers with PD and preschoolers with TD. There was a huge gap between the minimum and maximum scores of preschoolers with PD compared to preschoolers with TD: the minimum total score for preschoolers with PD was 9 points, with an average of 1.5, and the maximum total score was 52, with an average of 8.66; whereas the minimum total score for preschoolers with TD was 45, with an average of 7.5, and the maximum total score was 52, with an average of 8.66. To understand the essence of the difference in accumulated scores between preschoolers with PD and TD, we looked at the mean scores for each test.

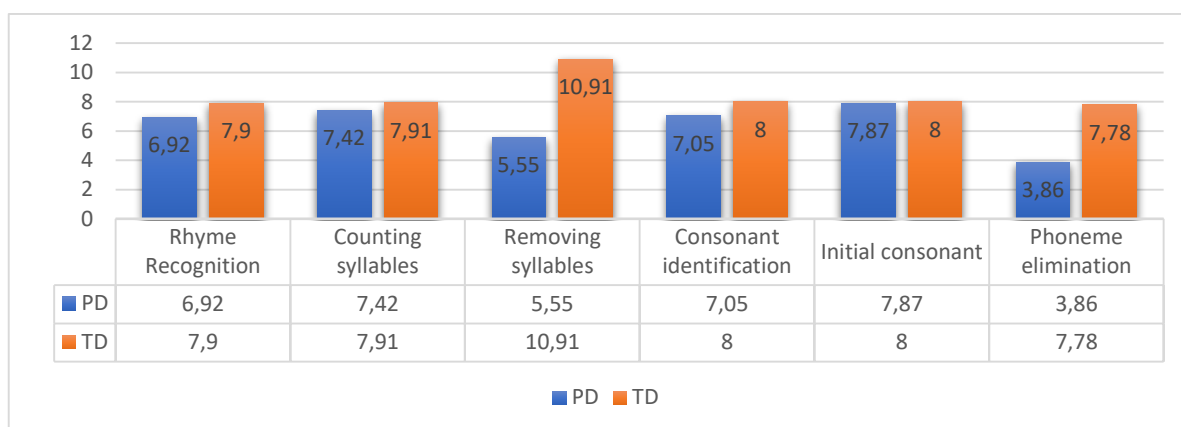


Fig. 2.1 Mean scores on the *Phonological Awareness method tests*, PD and TD subjects

We notice that the scores are different in some tests and very close in others, which suggests that for children with PD there are certain impediments, disabilities. Through the statistical processing of the data, we find statistically significant differences between preschoolers with PD and preschoolers with TD in Syllable Elimination ( $U=5974$ ;  $p<0.001$ ), Rhyme Recognition ( $U=4844$ ;  $p<0.001$ ), Consonant Identification ( $U=4680$ ;  $p<0.001$ ), Phoneme Elimination ( $U=5660$ ;  $p<0.001$ ) and Syllable Counting ( $U=4111$ ;  $p<0.001$ ). There were also statistically significant differences in the total score ( $U=6044.5$ ;  $p<0.001$ ) and in the mean score on this test ( $U=6044.5$ ;  $p<0.001$ ). There was no statistically significant difference in age between preschoolers with PD and those with TD ( $U=3409$ ;  $p=0.463$ ). The high values of the effect size in the Syllable Elimination ( $r_{bis}=0.87$ ) and Phoneme Elimination ( $r_{bis}=0.77$ ) tests, confirm the degree of difficulty encountered in achievement by children with PD compared to those with TD. We conclude that preschool children with PD have not yet formed phonological awareness, we attest many inabilities/incompetencies, gaps, difficulties even in simple tests such as Rhyme Recognition or Syllable Counting. The hypothesis was confirmed.

***Results of the Psychological Age of Language Test.***

*Purpose:* To ascertain the psychological age of language in children with PD and TD.

*Hypothesis:* There are differences between preschoolers with PD and preschoolers with TD in terms of psychological language age development. PAL in preschoolers with PD is underdeveloped related to CA, as well as related to preschoolers with TD.

The mean score showed that subjects with PD compared to those with TD scored lower on all test items. The results on all tests gave us the mean Psychological Age of Language for the two categories of children, PD: M=4.82 and DT: M=7.48, a considerable difference in scores.

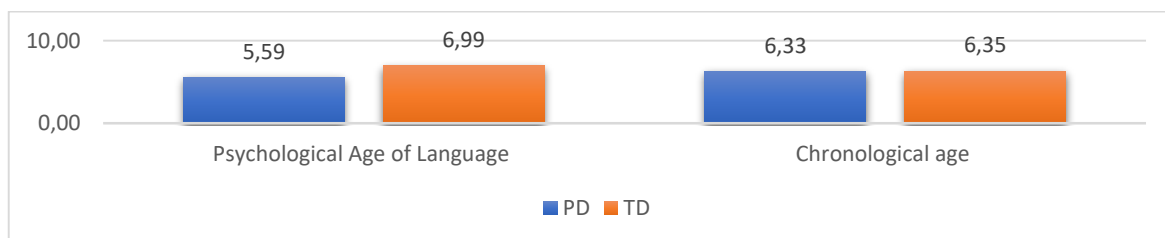


Fig. 2.2. PAL și CA of preschoolers PD / TD.

Statistical processing of the data obtained and their comparison, in subjects with PD and TD, revealed statistically significant differences in all test samples ( $U=4840.00 - 6400.00$ ;  $p<0.001$ ;  $r_{bis}=0.89 - 1.00$ ;  $>0.71$ ). Statistically significant differences in PAL were estimated between preschoolers with PD and TD. No differences were observed in the context of chronological age in preschoolers with PD and preschoolers with TD. The level of psychological language age development is strongly influenced by the presence/absence of phonological disorder.

### **Burlea test results.**

*Working hypothesis:* We will record insufficient development of the prerequisites to writing-reading (below the cut-off) in preschoolers with PD compared to TD; Preschoolers with PD will exhibit marked dyslexic predispositions compared to preschoolers with TD.

The test revealed the difficulties faced by preschoolers. A look at the average results per category of preschoolers informs us about the samples with higher difficulty and vice versa; in parallel we realise in whom the prerequisites for writing are better developed. The data processing demonstrates the statistically significant difference in all subtests summarised. The effect size is very high ( $r_{bis}=0.84-0.99$ ), which emphasizes the statistical significance.

Table 2.1. Performance and differences of PD/DT, Burlea test

	Assay	Mean		Mann-Whitney U	p	The effect size (r biserial)
		PD	TD			
Burlea Test	Image nomination	6,00	6,00	3200,00		
	Image completion	10,47	16,40	5892,00	< 0,001	0,84
	Spacial orientation	8,46	14,31	6135,50	< 0,001	0,92
	Orientation of graphic schemes	10,16	16,18	6285,00	< 0,001	0,96
	Arranging Images	5,47	8,62	6150,50	< 0,001	0,92

	Fine motricity skills of the hand	8,49	15,41	6378,00	< 0,001	0,99
	Notification of the direction and orientation of objects	9,29	16,62	6371,50	< 0,001	0,99
	Sequential stories	11,25	17,59	6342,00	< 0,001	0,98
	Total score	69,60	111,14	6376,00	< 0,001	0,99
	Average	8,70	13,89	6376,00	< 0,001	0,99

We therefore point out that children with PD are reluctant to develop the prerequisites for writing-reading on all levels and are at risk for the development of pronounced dyslexic predispositions over time compared to children with TD. It should be noted that the impediments to test performance were many, and for the group of preschoolers with PD they were insurmountable. Moreover, the hypothesis was confirmed.

### **Visual memory test results.**

*Working hypothesis:* The visual memory of preschoolers with PD will be underdeveloped and in relation to preschoolers with TD, there will be statistically significant differences.

Observations made during the evaluation allowed us to remark the following aspects: visual memory in preschoolers with PD is diminished, reduced in volume and poorer in terms of fidelity of reproduction, storage time is also lower compared to preschoolers with TD. Children with PD tended to make associations or confuse some notions with others in the same category, with notions similar in form/matter or with the generalizing word; they required more time to recall, the mode of exposure was chaotic, sometimes resorting to confabulations, naming intrusive notions. The time and mode of exposure was also a difference between the two groups of preschoolers. Children with TD were faster in reproducing memorised images, but they also stood out for their orderly presentation. Statistical processing indicated a statistically significant difference in the visual memory test.

Table 2.2. Significance of differences, Visual Memory test, PD/TD

	Mean		Mann-Whitney U	p	The effect size (r biserial)
	PD	DT			
<b>Observed differences between preschoolers with PD and preschoolers with TD</b>					
Memory	4,36	7,58	6303,00	< 0,001	0,97
<b>Observed differences between preschoolers with PD and preschoolers with TD – Girls</b>					
Memory	4,37	7,51	1718,50	< 0,001	0,95
<b>Observed differences between preschoolers with PD and preschoolers with TD – Boys</b>					
Memory	4,38	7,65	1440,00	< 0,001	1,00

We find no statistically significant difference between girls and boys within the category of children: TD (U=781.00; p=0.881) and PD (U=765.50; p=0.725). We conclude, Visual memory

in preschoolers with underdeveloped PD than in preschoolers with TD and this difference has a significant practical value.

**Results of the Visual Attention Test in Preschoolers.**

*Working hypothesis:* The visual attention of preschoolers with PD will be underdeveloped and in relation to preschoolers with TD, there will be statistically significant differences.

Differences are noted between children with TD and PD, with deficits in volume, stability and distribution. Preschoolers with PD performed the test chaotically, disregarding instructions, also ticking the wrong items or omitting necessary ones; voluntariness and stability of attention sufficiently low. Comparative analysis of results between preschoolers with PD and those with TD (Appendix 2, Table 2.19) highlights statistically significant differences (U=5408; p<0.001), with large effect size (r bis=0.69).

Table 2.3. Significance of Differences, Visual Attention Test, PD/TD

	Medii		Mann-Whitney U	p	The effect size (r biserial)
	PD	DT			
<b>Differences observed between preschoolers with PD and preschoolers with TD</b>					
Atenția	92,53	97,84	5408,00	< 0,001	0,69
<b>Differences observed between preschoolers with PD and preschoolers with TD - Girls</b>					
Atenția	93,83	97,98	1428,00	< 0,001	0,62
<b>Differences observed between preschoolers with PD and preschoolers with TD - Boys</b>					
Atenția	91,08	97,68	1272,00	< 0,001	0,76

Visual attention in children with PD is underdeveloped, the difference between PD and TD has a significant magnitude, gender does not influence.

**Results of the Cognitive Behaviour Test for pre-school children**

*Working hypothesis:* Cognitive behavior, through intellectual abilities/skills, will be slightly nuanced/marked by PD present in preschoolers, moment insignificant in those with TD; Statistically significant differences will exist between PD and TD.

We estimated: minimum Total Score for preschoolers with PD=36 p.; with TD- 48 p.; Average results, respectively: PD=3.27 p. and TD=4.36 p. Maximum Total Score for preschoolers with PD=51 p.; with TD=55 p.; Average results, respectively: PD=4.63 p. and TD=5.00 p. We estimated statistically significant differences in the subtests – Word Categories (U=4522.5; p<0.001), Intruder (U=6318.5; p<0.001), Object Definition (U=4695; p<0.001), Establishing Similarities (U=6079; p<0.001), Gaps (U=3600; p=0.001), Cause-effect relationship (U=4120; p<0.001), Missing words (U=4083; p<0.001), Absurdity in images (U=3480; p=0.007), Rhombic copying (U=4321; p<0.001), and Naming the position of objects (U=3920; p<0.001). The subtest Identify objects described by function (U=3274; p=0.672) showed no statistically significant difference.

Table 2.4. Results Mean and Differences, Cognitive Behaviour subtests, PD and TD.

	Subtests	Mean		Mann-Whitney U	p	The effect size (r biserial)
		PD	TD			
Cognitive Behaviour	Word Categories	4,25	4,86	4522,50	< 0,001	0,41
	Intruder	2,35	4,74	6318,50	< 0,001	0,97
	Object Definition	4,17	4,88	4695,00	< 0,001	0,47
	Identify objects	4,85	4,86	3274,00	0,672	0,02
	Establishing Similarities	2,73	4,84	6079,00	< 0,001	0,90
	Gaps	4,86	5,00	3600,00	0,001	0,13
	Cause-effect relationship	4,56	5,00	4120,00	< 0,001	0,29
	Missing words	4,62	4,99	4083,00	< 0,001	0,28
	Absurdity in images	4,91	5,00	3480,00	0,007	0,09
	Rhombic copying	3,55	4,95	4321,00	< 0,001	0,35
	Naming the position of objects	4,70	5,00	3920,00	< 0,001	0,23
	Total score	45,56	54,11	6379,50	< 0,001	0,99
	Average	4,14	4,92	6379,50	< 0,001	0,99

The table illustrates the statistically significant difference and the impressive effect size in 2 subsamples: *Intruder* and *Establishing Similarities*. Gender and age do not influence the results.

We found after analyzing and processing the results of preschoolers that, unlike children with TD, those with PD have many gaps in elementary knowledge, are agitated and chaotic in their actions, all of which result in the inability to remember, explain, deduce and generalize certain situations and simple problems. The statistical processing confirms the launched hypothesis.

### ***Results of the Staircase Test***

*Working hypothesis:* We will attest statistically significant differences between preschoolers with PD compared to TD. We found an adequate level of self-appreciation in the PD group is present in 21 preschoolers which constitutes 26.2%, respectively in 64 preschoolers with TD which constitutes 80%; low self-appreciation level: 51.3% of preschoolers with PD (41 subjects); 7.5% preschoolers with TD (6 subjects). Preschoolers with PD accumulated mean scores equal to 3.94 p; preschoolers with TD total 5.56 p. The comparative analysis of the results of preschoolers with PD and those with TD indicates a statistically significant difference –  $U=5219.5$ ;  $p<0.001$ ,  $r_{bis}=0.63$ .

Table 2.5. Significance of differences, Staircase test, PD/TD

	Mean		Mann-Whitney U	p	The effect size (r biserial)
	PD	TD			
<b>Differences observed between preschoolers with PD and preschoolers with TD</b>					
self-appreciation	3,94	5,56	5219,50	< 0,001	0,63
<b>Differences observed between preschoolers with PD and preschoolers with TD - Girls</b>					

self-appreciation	3,95	5,56	1427,00	< 0,001	0,62
<b>Differences observed between preschoolers with PD and preschoolers with TD - Boys</b>					
self-appreciation	3,95	5,57	1184,50	< 0,001	0,64

The statistically significant difference in the intergroup gender variable was confirmed, as well as the medium effect size. We support the statement that all language disorders cause psychological and behavioral changes and create difficulties in integration and adaptation. Through the obtained results we can say that the hypothesis was confirmed.

***The results of the Anxiety Test***

*Hypothesis:* the level of anxiety will be different, predominantly increased in the group of subjects with PD, a fact that will note the statistically significant difference between TD and PD.

95% of preschoolers with PD show moderate and high levels of anxiety while preschoolers with TD, medium and low levels prevail – 93.7%. Anyway, anxiety is specific to both categories of preschool children; the difference is the anxiety index, which is low in TD. The average of the results of the Anxiety Test is 37.49 p., in children with PD and 27.48 p. in children with TD. The non-parametric U-Mann-Whitney method estimated a statistically significant difference between preschoolers with PD and those with TD: U=1873; p<0.001. At the same time, the value of the effect size  $r_{bis}=0.41$  denotes a weak effect of this difference at a practical level. Likewise, we attest to statistically significant differences from the perspective of gender, between groups (girls and boys).

Table 2.6. Mean and Differences, Anxiety test, PD/TD

	Mean		Mann-Whitney U	p	The effect size (r biserial)
	PD	TD			
<b>Differences observed between preschoolers with PD and preschoolers with TD</b>					
Anxiety	37,49	27,48	1873,50	< 0,001	0,41
<b>Differences observed between preschoolers with PD and preschoolers with TD – Girls</b>					
Anxiety	37,68	26,09	451,50	< 0,001	0,49
<b>Differences observed between preschoolers with PD and preschoolers with TD – Boys</b>					
Anxiety	36,90	29,08	486,50	0,012	0,33

The confirmed level of anxiety is different in preschoolers with PD and those with TD, predominantly increased in the group of subjects with PD, a fact that denotes a statistically significant difference and the hypothesis was validated, the statistically significant difference between TD and PD was confirmed for the anxiety dimension.

**Correlational study between research variables.** *Working hypothesis:* There are significant correlations between the variables studied, in the two groups of preschoolers investigated, between the Phonological Awareness Method and the Psychological Age of Language, the Burlea test, Cognitive Behavior, Visual Memory, Visual Attention, Self-appreciation and Anxiety. In this sense, the non-parametric Spearman rank correlation test was applied. The correlational study



between the research variables was carried out with the purpose of justifying the investigation methods and the research hypotheses. The determination of significant correlations between variables was the basis of the integrative psycho-logopedic program aimed at the recovery of phonological disorders in preschool children.

### **Chapter 2 Conclusions.**

1. The finding experiment revealed a statistically significant difference between the outcomes of preschoolers with PD and TD in the areas investigated: phonological awareness, PAL, prerequisites for writing-reading/dyslexographic predispositions, cognitive behaviour, cognitive psychological processes, emotional and self-appreciation; the effect size index assessment confirms the magnitude of the relationship.

2. From the perspective of gender and age differences, we noted that they do not have a major influence on the results obtained, on the group average. The age range of the children evaluated is small and does not change the data obtained. Gender has a role on the results obtained in some of the methods applied, for example: the Rhyme Recognition test of the Phonological Awareness Method; the Picture Completion test of the Burlea test; the Cause-Effect Relationship and Rhombus Copying subtests of the Cognitive Behaviour test; the Contraries without objects and pictures test of the Psychological Age of Language test, girls have higher scores than boys, which we interpret as a better development and readiness to solve situations.

3. Phonological awareness in preschoolers with PD is lower than the limits (scores) achieved by preschoolers with TD. The Phoneme Elimination and Syllable Elimination subtests indicate a large magnitude of effect size between scores. Between the other subtests, there is also a statistically significant difference, except that the effect size is medium.

4. The psychological age of language, is the key indicator in the research. It was assessed and found in preschool children with PD, a difference of one year and seven months from the chronological age, in those with TD, PAL is higher than those with PD. The gap is large, and because of this the results obtained in most subtests reveal discrepancy between the expected and actual outcome. The vicious circle, which tends to consolidate, between PAL and PD, slows down development in the cognitive and affective segments with repercussions on the assimilation of reading-writing skills/competences, and favours predispositions towards dyslexic dysgraphic disorders. There are statistically significant differences between the results of pre-school children with PD and those with TD, which leads us to structure an integrative psycho-logopedic program.

5. The use of the Burlea test to assess the development of prerequisites for reading-writing and to identify dyslexic dysgraphic predispositions, opened the perspective of awareness of the link between PD and the formation of prerequisites for reading-writing, possible dyslexic disorders in the school period. The group of preschoolers with PD scored low on all subtests (except the Image nomination subtest), which means underdevelopment of skills necessary for writing-reading education. A statistically significant difference was established between preschoolers with PD and TD.

6. By identifying predispositions to writing and reading disorders, we have clarified what the oral language gaps are, what the abilities are to compose a story according to subject images, how to orient in the picture space and on the paper, how the hand-eye orientation is developed, what the manual praxical skills are and how the child can logically arrange the pictures in consecutive order, an important moment that captures the complexity of the linguistic aspects of language, including the phonological ones, which are of direct interest to us. After all, PDs are the main link in the chain of reported deviations. The statistically significant difference between PD and TD highlights the insufficiency/underdevelopment of oral language, fine motor skills of the hands, the ability to orient oneself spatially, in the picture, in the sheet, the way of capturing images from the perspective of logical and consecutive arrangement.

7. The general skills/knowledge of preschool children captured by the Cognitive Behaviour test are lower in those with PD and advanced in those with TD; there is a statistically significant difference between them. The difference tells us about the impact that PD has on the assimilation of knowledge about the environment, on general cognition, but also its application in everyday experience, in logical explanation, verbal and praxical expression, indirectly reflecting cognitive processes (memory, thinking, attention, perception, imagination, motor skills, language). The deficiencies detected must necessarily be overcome through the development and implementation of an integrative psycho-logopedic program.

8. Visual memory and visual attention is marked by phonological disorder. The values of preschoolers with PD are lower than those of preschoolers with TD, which confirms the hypothesis about the existence of statistically significant difference, the effect size being strong.

9. The processing of the results obtained from the Staircase method indicates a statistically significant difference between preschoolers with PD and TD, which indicates a predominantly low self-appreciation in children with PD. Low self-esteem generates distrust in one's own strengths and decision-making, negative self-image, frustration, etc., and further triggers a mix of negative emotions.

10. Anxiety, as a deep negative emotion was detected by the Temml-Dorki-Amen authors' test. Anxiety was identified in both categories of children; however, in preschoolers with PD, the medium to high level prevails, and in preschoolers with TD, the medium to low level prevails. So the difference found between the results of the categories of PD/TD children is statistically significant.

11. Between the researched variables, positive and negative correlations were established. Positive correlations were identified between Phonological Awareness, Cognitive Behavior, PAL and the Burlea Test, and negative correlations were estimated between Phonological Awareness and PAL. The interpretation of the phenomenon consists of the following: disorders of Phonological Awareness directly influence functions related to language (oral, writing/reading), will influence intellectual capacities and deviate PAL, will favor the appearance of predispositions towards dyslexodisgraphic disorders and, respectively, subsequent academic success. Positive correlations were also identified between Cognitive Behavior and Memory, Visual Attention, and negative correlations between Cognitive Behavior and Anxiety, Self-appreciation in preschoolers from the PD group, which can be explained by the following: intellectual capacities are influenced by the ability to memorize and visual attention and in inversely influences anxiety and self-appreciation.

In the elaboration of the integrative psycho-logopedic program, all ascertainment estimates serve as a fundamental benchmark, which helps us in the selection of exercises, games, techniques (psycho-logopedic strategies) in order to improve and remedy the gaps and insufficiencies identified.

In the chapter 3, entitled "*Remediation of phonological language disorders*", the general characteristic of the formative experiment is presented; the effectiveness of the developed and implemented *integrative psycho-logopedic* program is discussed. *The purpose of the formative experiment* is the development, implementation and validation of an integrative psycho-logopedic program aimed at the remediation/recovery of phonological disorders in parallel with the increase in the psychological age of language, the education of reading-writing premises, the stimulation and improvement of cognitive, emotional and appreciative aspects. *Objectives*: 1. Development and implementation of the integrative psycho-logopedic program; 2. Verification of the impact of the integrative psycho-logopedic program; 3. Drawing general conclusions and drawing up final recommendations for specialists. *Operational objectives*: Remediation of phonological language disorder by developing phonological awareness; Advancing the psychological age of the language; Formation of premises for writing and reading; Development of cognitive psycho-behavior - general intellectual ability, memory, attention, representations, perception, thinking; Increasing

self-appreciation, self-confidence and diminishing negative emotions; Education of relational/communication skills with those around. *Hypothesis*: if we develop an integrated psycho-logopedic program, on the one hand, with specific logopedic content, and on the other hand, with psychological content, *we will be able to therapeutically influence language disorders* (phonological disorder, psychological age of language, premises of writing-reading), cognitive behavior (general intellectual abilities), memory and attention, self-esteem and anxiety, so the intervention will have a deep and complex impact on the development of the preschool child with PD, including their remediation. *Experimental variables*: *Independent* variable: The integrative psycho-logopedic program. *Dependent* variable: Language: phonological disorder; the psychological age of language, the prerequisites of reading and writing; Cognitive behavior (general intellectual abilities); Memory; Attention; Self-esteem, emotional manifestation expressed through anxiety. *The formative experiment* took place between January and May 2019. Two groups of preschoolers were formed, from the category of children with phonological disorders – the experimental group (GE) and the control group (GC), each of 12 children. The homogeneity of the groups was confirmed by the non-parametric *U-Mann-Whitney* statistical test. The age of the subjects is between 6.5-7 years, (converted age equal to 6.5-6.9).

The integrative psycho-speech therapy program took place over 15 weeks, 3 sessions per week, 35 minutes long, 20 speech therapy activities and 25 psychological sessions. The activities took place in subgroups of 6 children each. The logistics of developing and implementing the psycho-logopedic intervention program for children with speech disorders was guided by a number of principles. The development of the integrative psycho-logopedic program was based on the study of tangential works by national authors A. Cucer [9], D. Ponomari [23]; researchers from Romania – A.Țapaurin [28], L.Bejan, I.Drușăș, L.Hărdălău [2], D.Buganu [5]; psychological and pedagogical intervention programs with preschool children by the authors: N.Bucun [4], G.Cucu-Ciuhan [10], M.Vîrlan [31], L.Miță [12], A.Ciobanu [8], A .Veleanovici [29], from the intention of finding efficient and fast elements for working with children. The integrative psycho-logopedic therapy program is structured on several modules: Phonological awareness; Cognitive behavior; Cognitive; Socio-emotional. After completion of the integrative psycho-logopedic program, in the control experiment we followed the **Purpose**: To verify and determine the impact of the integrative psycho-logopedic program on preschool children with PD using the *following psychological tools*: *Phonological Awareness Method, Psychological Age of Language Test, Burlea Test, Preschool Child Cognitive Behavior Assay, Visual Memory Test, Visual Attention Test, Staircase Test, Anxiety Test.*

Statistical processing of the data was carried out using the R system for statistical and graphical analyses. For the experimental group (EG) and the control group (CG), descriptive statistics were performed (indicators of central tendency - mean, median, frequencies; indicators measuring the variation of data around the central tendency - standard deviation, bolting, skewness). When examining the shape of the data distribution, we found pronounced deviations from normality: skewness exceeds 1, and skewness exceeds 3. We resorted to non-parametric statistical methods: the *U-Mann-Whitney* independent samples comparison statistical test for the significance of observed differences between EG and CG – retest; *Wilcoxon* test for significance of observed differences in test/retest scores between EG and CG. The homogeneity of EG and GC was statistically confirmed using the *U-Mann-Whitney* test. Prelucrarea statistică a datelor a fost efectuată utilizând sistemului R pentru analize statistice și grafică.

### ***Retest results, Phonological Awareness Method***

*Working hypothesis:* there will be statistically significant differences between the results obtained by GE and GC preschoolers in Phonological Awareness, as a result of the application of the integrative psycho-logopedic program.

*Wilcoxon* test values for EG indicate the difference between children's results before and after the intervention as a statistically significant difference. For CG, no statistically significant differences between the test/retest scores were confirmed, and for some items we have a lack of data variation, the level of phonological processing remaining at the same level as the test stage.

Table 3.1. EG/CG test/retest results, Mean and Wilcoxon test, *Phonological awareness*.

Assay	EC				CG			
	Test M1	Retest M2	V	p	Test M1	Retest M2	V	p
Rhyme Recognition	6,33	7,67	55,00	0,004	7,42	7,42	0,00	-
Counting syllables	7,33	7,92	21,00	0,020	7,17	6,83	0,00	0,317
Removing syllables	4,75	9,33	66,00	0,003	4,58	4,67	1,00	0,317
Consonant identification	7,25	8,00	28,00	0,014	6,50	6,50	0,00	-
Initial consonant	7,83	8,00	1,00	0,317	8,00	8,00	0,00	-
Phoneme elimination	2,42	7,17	66,00	0,003	3,00	3,25	1,00	0,317
Total score	35,92	48,08	66,00	0,003	36,67	36,67	0,00	-
Average	5.99	8,01	66,00	0,003	6,11	6,11	0,00	-

Notă: Celulele goale apar din cauza lipsei de variație a datelor.

The application of the *U-Mann Whitney* test at the retest stage revealed statistically significant differences between EG and CG, in the samples: Counting syllables (U=46.00; p=0.048);

Removing syllables (U=12.00; p<0.001); Consonant identification (U=12.00; p<0.001); Phoneme elimination (U=2.00; p<0.001). For the Rhyme Recognition test, the difference is statistically insignificant (U=51.50; p=0.172), and for the Initial Consonant test, there was no data variation between EG and CG. Summing up, we conclude that the results of the Phonological Awareness Method of preschoolers from EG, compared to those from CG, denote a significantly higher capacity for phonological language processing, which means the improvement of the phonological disorder.

**Results of the Psychological Age of Language Test.**

*Working hypothesis:* the integrative psycho-logopedic program will have a major impact on the evolution of PAL in EG preschoolers compared to CG. The analysis of the test-retest results at EG shows an increase in the average score in all samples. At CG we observe a slight increase in a few samples, and in most cases we observe a stagnation of scores.

Table 3.2. Mean results and Wilcoxon test, *Psychological Age of Language Test*, GE/GC, test/retest

Assay	EG				(rbis)	CG				(rbis)
	Test M1	Retest M2	V	p		Test M1	Retest M2	V	p	
Contraries with ob/imag	5,00	8,00	78,00	0,002	0,90	5,17	5,25	1,00	0,317	0,29
Gaps	3,58	6,17	78,00	0,002	0,90	3,67	3,67	0,00	-	-
Numbers	3,50	4,75	66,00	0,002	0,88	3,42	3,42	0,00	-	-
Matters	4,25	6,25	78,00	0,002	0,90	4,58	5,58	36,00	0,010	0,75
Contraries w/o ob/image	4,58	6,50	78,00	0,002	0,90	4,75	4,75	0,00	-	-
Colours	7,00	7,92	21,00	0,020	0,67	6,17	6,33	1,00	0,317	0,29
Verbs	5,25	6,75	15,00	0,041	0,59	5,33	5,17	0,00	0,317	0,29
Average PAL	4,74	6,62	78,00	< 0,001	0,88	4,73	4,88	69,00	0,018	0,68

Note: Empty cells occur due to lack of variation in the data.

If we analyze the PAL average, at the test stage the results of EG and CG children are identical. After the intervention, at the retest stage, the mean PAL increased in both groups, however more in subjects from EG. The increase in PAL in both groups of subjects is due to the educational influence in Early Educational Institution (EEI).

*U-Mann Whitney* test shows statistically significant differences in all samples, signifying improvement in all test samples. Also important is the effect size value, which is strong.

Table 3.3. Mean results, PAL test, EG/CG, retest

	Assay	Mean		Mann-Whitney U	p	The effect size (r biserial)
		EG	CG			
Psychological Age of Language	Contraries with ob/imag	8,00	5,25	0,00	< 0,001	1,00
	Gaps	6,17	3,67	5,50	< 0,001	0,92
	Numbers	4,75	3,42	7,50	< 0,001	0,90
	Matters	6,25	5,58	34,00	0,013	0,53
	Contraries w/o ob/image	6,50	4,75	7,00	< 0,001	0,90
	Colours	7,92	6,33	13,00	< 0,001	0,82
	Verbs	6,75	5,17	31,50	0,005	0,56
	Average (Psychological Age of Language)	6,62	4,88	0,00	< 0,001	1,00

We conclude that the psycho-logopedic program had a positive influence in increasing the PAL in children from EG, from where we summarize that the hypothesis was confirmed.

#### ***Burlea test results.***

*Hypothesis:* we assume that through the psycho-logopedic program we managed to form premises towards reading-writing and the dyslexodisgraphic predispositions will be less pronounced in EG compared to CG, and there will be statistically significant differences between the groups, through the prism of the scores obtained on the test samples.

The Wilcoxon test revealed a statistically significant difference between EG and CG, test/retest, and clearly delineates the EG jump, and in CG preschoolers statistically significant progress was outlined only in some items.

Tabel 3.4. Mean scores and Wilcoxon test on *Burlea* test items, EG/CG, test/retest.

Bulea Test Item	EG				CG			
	Test M1	Retest M2	V	p	Test M1	Retest M2	V	p
Image nomination	6,00	6,00	-	-	6,00	6,00	0,00	-
Image completion	10,08	15,42	78,00	0,002	9,17	10,17	45,00	0,006
Spacial orientation	8,00	15,08	78,00	0,002	7,67	9,00	66,00	0,003
Orientation of graphic schemes	9,50	15,75	78,00	0,002	10,00	10,17	7,50	0,317
Arranging Images	5,42	9,00	78,00	0,002	5,00	5,33	17,50	0,102
Fine motricity skills of the hand	9,08	15,42	78,00	0,002	7,42	8,08	36,00	0,005
Notification of the direction and orientation of objects	8,50	16,00	78,00	0,002	8,67	9,17	10,00	0,063
Sequential stories	10,17	18,00	78,00	0,002	11,33	12,17	28,00	0,014

Note: Empty cells occur due to lack of variation in the data.

At the retest, between EG and CG, statistically significant differences appear in all samples, and the value of the effect size is at a high level (*r bis* values between 0.99 and 1.00), which denotes the effectiveness of the intervention program. CG preschoolers, at some samples also perform well, they have developed necessary and useful skills at the school level, the risk of predispositions towards writing and reading disorders has decreased, they demonstrate statistically significant differences, a fact explained by the continuity of the educational environment, even if it is not strong enough.

***Results of the Cognitive Behavior Test in preschool children.***

*Working hypothesis:* Cognitive behavior, through intellectual capacities/competencies will have expansion in preschool children from EG due to the psycho-logopedic intervention compared to CG.

The statistical analysis of the data obtained at the EG test-retest stage, the *Wilcoxon* test, shows a progressive and statistically significant jump, only in EG preschoolers, in the following subsamples: Word categories ( $V=15.00$ ;  $p=0.038$ ); The intruder ( $V=78.00$ ;  $p=0.002$ ); Object Definition ( $V=36.00$ ;  $p=0.008$ ); Establishing similarities ( $V=66.00$ ;  $p=0.003$ ); Names the position of the objects ( $V=21.00$ ;  $p=0.023$ ), at GC no statistically significant differences were identified (the threshold of significance being comprised between  $p=0.102 - 0.317$ ).

Statistically significant differences, between EG and CG, retest were attested in the subsamples: Word categories ( $U=18.00$ ;  $p<0.001$ ); The intruder ( $U=2.50$ ;  $p<0.001$ ); Object Definition ( $U=38.00$ ;  $p=0.023$ ); Establishing similarities ( $U=4.50$ ;  $p=0.001$ ); Absurdity in images ( $U=36.00$ ;  $p=0.006$ ); TP ( $U=0.00$ ;  $p=0.001$ ); Mean on subsamples ( $U=0.00$ ;  $p=0.001$ ). For the subtests Identification of objects, Gaps, Cause-effect relationship, Missing words, Rhombus copying and Name the position of objects, no statistically significant differences were identified,  $p=0.178 - 0.546$ .

Among the previously mentioned items, with a statistically significant difference, at the retest level between EG and CG, we can highlight those that present a large practical magnitude of this difference through the high value of the effect size, namely: Word categories ( $r_{bis}=0,75$ ), The Intruder ( $r_{bis}=0.97$ ) and Establishing Similarities ( $r_{bis}=0.94$ ). The results in these subsamples are valuable because of the large magnitude of the effect at the practical level, but also because they were quite difficult and vulnerable in the finding experiment.

Evoking the performances of preschoolers in EG, evaluated by statistical methods, we invoke the positive impact of completing the integrative psycho-logopedic program, and its absence at CG, through the need for their involvement in diversified developmental activities in small groups of children.



### **Visual Memory test results.**

*Working hypothesis:* we will identify high values of visual memory in EG preschoolers, as an effect of the integrative psycho-logopedic program, an unconfirmed phenomenon in CG, and statistically there will be differences.

The results obtained at the test-retest stages of Visual Memory indicate increasing values of the mean for EG and regression for CG.

Table 3.5. Mean scores and *Wilcoxon* test, Visual memory, test/retest, EG/CG.

	Test M1	Retest M2	V	p
EG	4,58	6,75	66,00	0,003
CG	3,92	3,83	0,00	0,317

The impact of the psycho-speech therapy program, expressed through EG and CG data, at the retest stage (*U-Mann Whitney test*) accentuated the statistically significant difference ( $U=1.50$ ;  $p<0.001$ ), having a significantly high effect size value ( $r_{bis}=0.98$ ). EG, by being involved in the psycho-speech therapy sessions, separated from CG, by the score obtained, thus confirming the working hypothesis, according to which there are statistically significant differences between the groups.

### **Results on the Visual Attention test.**

*Working hypothesis:* EG will report high performance on visual attention, as opposed to CG, and there will be a statistically significant difference between them.

Analysis of test-retest results indicated their dynamics, in both groups the average increased.

Table 3.6. Mean scores and *Wilcoxon* test, Visual attention, test/retest, EG/CG.

	Test M1	Retest M2	V	p
EG	93,83	97,25	45,00	0,007
CG	92,00	93,25	55,00	0,004

At the retest stage, applying the *U-Mann Whitney test* indicated statistically significant differences ( $U=36.50$ ;  $p=0.037$ ) between EG and CG (Tab. 3.12), (Annex 3, Table 3.6.).

The results for the assessment of visual attention confirm the working hypothesis, the differences being statistically significant between EG and CG.

### **Results of the Staircase Test.**

*Working hypothesis:* following the application of the psycho-logopedic program, self-appreciation will improve and there will be statistically significant differences between GE and GC preschoolers.

The data obtained at the test-retest stages of the Staircase test speak of self-appreciation, which tends to normalize, return and stabilize at the perceived "adequate" limit. We observe the increase

of the average values in EG preschoolers, a result of the influence of the psycho-logopedic program. At CG, we also observe a slight change in self-appreciation, but it is too small to change the child's condition.

Table 3.7. Average results and Wilcoxon test, the Staircase test, EG/CG, test/retest.

	Test M1	Retest M2	V	p
EG	4,25	5,92	66,00	0,003
CG	4,08	4,25	3,00	0,157

At the retest stage, *U-Mann Whitney* indicated statistically significant differences between EG and CG:  $U=18.50$ ;  $p=0.001$ ,  $r_{bis}=0.74$ ; as an effect and confirmation, children relate, collaborate and express themselves with confidence, appreciate themselves appropriately, show a respectful attitude towards those around them and towards themselves. The impact of the integrative psycho-logopedic program is visible – self- appreciation increased and self-appreciation became adequate, expressed by EG data compared to CG, at the retest stage; the hypothesis was confirmed.

### ***The results of the Anxiety Test.***

*Working hypothesis:* the level of post-intervention anxiety will decrease, decrease and there will be statistically significant differences between GE and GC.

The comparative analysis of the data at the test/retest stages, at EG demonstrated a decrease in the average anxiety values:  $M1=40.08$ ;  $M2=25.67$ , which we qualify as a positive impact; at CG a *slight* increase in anxiety was observed:  $M1=35.17$ ;  $M2=35.25$ . The *Wilcoxon* test delimited a statistically significant decrease in anxiety in EG preschoolers, test/retest stage:  $V=0.00$ ;  $p=0.003$ . The effect size of this difference carrying a high magnitude at the practical level ( $r_{bis}=0.85$ ). At CG, the difference being statistically insignificant ( $V=3.00$ ;  $p=1.000$ ), with a tendency to accentuate and worsening of the child's emotional state. At the retest, the *U-Mann Whitney* test indicated a statistically insignificant difference between EG and CG:  $U=103.50$ ;  $p=0.064$ ;  $r_{bis}=0.44$ . anxiety indices at EG as an average value – decrease!, anxiety is reduced. The children became sociable, resourceful, bold, self-confident and with initiative, they freely expressed their attitude, expressed their own opinion. But, if we refer to CG, the difference is statistically insignificant! The results of the *Anxiety* test partially confirm the working hypothesis, the level of anxiety in EG subjects decreased, and we believe that it is the positive impact of the applied integrative psycho-logopedic program, but to obtain higher results, with an essential decrease in anxiety, we believe that it is need long time and more psychological techniques.

### **Chapter 3 Conclusions**

1. The developmental-formative stage of the research started with the development of an integrative psycho-logopedic program; for the selection of preschoolers with PD for the given

- stage and their division into 2 GE/GC groups, their homogeneity (similarity) was established by statistical methods. Psycho-logopedic sessions were held with GE subjects, with a multifunctional purpose: to remove PD and general improvement of linguistic aspects and formation of the premises of writing-reading, development of cognitive behavior and cognitive processes, normalization/stabilization of self-appreciation and diminishing anxiety.
2. Verification of the impact of the psycho-logopedic program was carried out by resuming and reapplying the set of methods from the finding stage. The statistical processing of the results indicates positive jumps in the test/retest phase between GE and GC, but also in the retest phase, which identifies statistically significant differences between GE/GC.
  3. The Phonological Awareness method reveals improvements in phonological awareness/processing on all five components. EG preschoolers easily identify sounds in any position, syllables, differentiate consonants, detect words that share the same consonant, modify words. CG preschoolers have made very little progress in phonological processing; they do well on the general subtests of Phonological Awareness. The method itself is very effective, productive and informative.
  4. We noted the rise in PAL in EG children, either that PAL equaled CA or exceeded CA. Statistically significant differences were found between EG and CG, which tells about the children's ability to explain the meaning of words, find word gaps at sentence level, make inferences, understand without confusion the meaning of verbs.
  5. Reassessment of the development of the prerequisites for writing and reading, indicates improvement and overcoming of children's difficulties in writing/copying graphic elements, spatial orientation, story-telling, etc., as we can see statistically significant differences between EG and CG.
  6. Retesting showed statistically significant differences between EG and CG and on the Cognitive Behaviour assay. Children in EG demonstrated diverse intellectual abilities, skills, knowledge in observing nonsense in pictures, naming and explaining generalizing words, observing similarities and differences between objects, explaining cause and effect phenomena.
  7. Visual memory and visual attention are noted by an increase in the volume of word names of objects, this proves that the ability to reproduce, recall and fidelity of memory increases; attention, concentration, distribution and switching have stabilized, the spirit of observing details – indicators of the psychic power not to deviate from one activity/action to another, general competences about the surrounding objective reality have developed; here we have statistically significant differences between EG and CG as well.

8. Regarding the Staircase test, indicate the positive results. The change in self-appreciation occurs, we obtained values that indicate adequate self-appreciation in EG children. In reality, children feel self-confidence, decisiveness in actions, verbalize the choice made. The children from CG made some ascents on the Staircase, but insignificant.
9. From the point of view of anxiety, the value and statistical indices indicate statistically insignificant differences between EG and CG. We have statistically significant test/retest differences only for EG. Anxiety is reduced in EG children, they have become much calmer, quiet, temperate, they have developed their ability to relate and social integration, spontaneity in actions and creativity has appeared. They learned coping techniques for restlessness and anxiety, negative emotions. Inner peace raises the yield of each activity, harmonizes the personality at the level of relationship/communication and psychobehavior.
10. The logistic structure of the integrative psycho-logopedic program, the confluence of psychological and speech therapy strategies, the involvement of all psychological structures (language, cognition, emotions, self-esteem) in the intervention/training, in the end produced a positive impact on the development of preschoolers with EG in all modules components of the program, which proves/confirms the validity of the program, but also the initial hypothesis about the need for exhaustive intervention. The final empirical results give us the right to say that the research is over, but there is room for future research.

### **GENERAL CONCLUSIONS AND RECOMMENDATIONS**

1. The synthesis of scientific approaches leaves a special place for language disorders, as a disability [UNICEF, 1995], of typological inhomogeneity, of different forms and intensity, conditioned by specific laws of the disability, such as the time of the affect, the location, the surface and the character of the lesion. Any language disorder affects and disrupts the linguistic aspects of language: sound/phonological, lexical, grammatical, semantic syntactic and pragmatic. 2. The research of the phonological disorder supplements the theoretical and practical background of the psychological and speech therapy sciences with useful information for the remedy of the phonological language disorder, by identifying its vulnerable points, elucidating the directions of early intervention, in order to achieve a qualitative recovery as early as possible. 3. The phonological disorder represents an acute problem/impediment in the preschool period, with consequences on the child's psyche, either for a short period, but also in the long term, if they are not identified and remedied in time. Neglecting speech therapy intervention, initially, and then psychological intervention lead to emotional (frustration, anxiety) and cognitive deficiencies, with far-reaching consequences on reading and writing and academic success in general. Phonological

awareness is necessary for learning and using the alphabetic code. 4. The selected set of methods (diagnostic and statistical), was useful, well thought out and correctly staged for achieving the objectives in the evaluation of PD and other mental processes, with direct or indirect involvement. 5. The comparative-statistical evaluation, between preschool children with PD and with TD, identified the specifics of phonological awareness, determined PAL, evaluated the development of premises towards writing-reading, detected the existence of predispositions towards future disorders of writing-reading, evaluated the general intellectual ability through Cognitive behavior, the level of development of visual memory and visual attention, recorded the presence of low self-appreciation and high anxiety, statistically significant differences between the categories of children being reported; the effect size index shows medium to strong magnitude. Gender does not generate/determine differences or limits at the intragroup level; only intergroup in preschoolers with PD, characteristics/deficits were detected, as being more pronounced in girls than in boys. Age did not reveal differences between preschoolers. 6. Statistical correlations between the research variables suggest relationships, the measure of dependence between the considered variables; they showed the changes produced according to the values of the other variable. The type of correlation (positive/negative) and how strong this correlation is was assessed. 7. The integrative psycho-logopedic program developed on scientific principles, with objectives and modular structure, was implemented and then validated by controlling the impact on Language (PD, PAL, reading-writing premises), Cognition (cognitive behavior, memory, attention), self-appreciation and anxiety. The results of preschoolers participating in training (EG) confirm the beneficial effect of the methods, techniques applied to remedy phonological disorders.

### **Recommendations for implementation**

1. Phonological disorders are obvious and dangerous at the age of older preschoolers and we have found that they stagnate, train the development of linguistic aspects, are correlated with deficiencies in cognitive, emotional processes, self-appreciation, and also represent a risk in the emergence of reading-writing disorders. *The dynamic observation of the path of the phonological disorder in young students would be very opportune from the perspective of treatment as well as prevention.*
2. The comparative and parallel study of PD with Complex Language Disorders (alalia), would be very timely and informative. *It is currently unknown how PD would evolve, how it would manifest, what intensity it would have and how susceptible it would be to treatment, in the case of children diagnosed with language underdevelopment (alalia).*

3. The content of the integrative psycho-logopedic program can be used in its entirety, but *it can also be adapted, modified and supplemented to be implemented in the educational activities of specialists at the level of EEI and primary and inclusive education.*
4. The evaluation kit can have multiple applicability in sorting but also in the actual (complex) evaluation. The set of tools is made up from the perspective of the assessment of psychological cognitive processes (Memory, Attention, Language), emotional, self-appreciation and predispositions to reading-writing disorders, so we recommend it *for identifying the child's maturity towards school and, if necessary, to intervene with strategies to improve/overcome reluctance.*
5. *The question arises, what other mental phenomena does PD affect? Are we referring to phenomena, but specifically mental processes such as volitional, motivational, imagination/creativity, intelligence? Such research would answer this question.*

### **Suggestions for future research**

Starting from the experimental results in this paper, new research can be organized to *investigate*: 1. Phonological disorders untreated in preschool children and transferred to the early school stage! Observing and Examining the effects, manifestations, dynamics, consequences on the pupil's personality, and from the perspective of academic success; 2. Phonological disorders in relation to dyslexia-dysgraphia; 3. Phonological disorders in relation to other psychic phenomena/processes, than those studied in this paper; 4. Research of phonological disorders from the perspective of education in conditions of bi/trilingualism; 5. Regarding the prevention and early remediation of phonological disorders in preschoolers, we suggest intensifying the dominant activity: emotional communication (6-12 months); manipulation with objects and the development of impression-expressive language (1 year-3 years).

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## ADNOTARE

### **Haceatreaan Olesea. Confluente psihologice și logopedice în recuperarea tulburărilor fonologice de limbaj la preșcolari. Teză de doctor în psihologie. Chișinău, 2022.**

**Structura tezei:** Teza este constituită din: adnotări, lista abrevierilor, introducere, trei capitole, concluzii generale și recomandări, bibliografie din 218 titluri, 4 anexe, 134 pagini de text de bază, 32 figuri și 35 tabele. Rezultatele obținute sunt publicate în 12 lucrări științifice.

**Cuvinte-cheie:** tulburare de limbaj, tulburare fonologică, conștiință și procesare fonologică, insuficiență fonetico-fonematică, program psiho-logopedic integrativ.

**Domeniul de studiu:** Psihologia limbajului și comunicării.

**Scopul cercetării:** Recuperarea/remedierea tulburării fonologice prin aplicarea programului psiho-logopedic integrativ, cu repercusiune/impact/influență asupra limbajului, proceselor cognitive, emoționale, autoaprecierii și de formare/educare a premiselor pentru scris-citit, la copii preșcolari de 6-7 ani.

**Obiectivele preconizate ale cercetării:** studierea aprofundată a literaturii științifice de domeniu și descrierea, sinteza datelor științifice analizate; structurarea instrumentelor de evaluare; reliefa/distingerea particularităților tulburării fonologice și diferențelor de gen în manifestarea tulburării fonologice la preșcolari; identificarea nivelului dezvoltării proceselor cognitive (memorie, atenție), emoționale (anxietate), autoaprecierii, premiselor pentru scris-citit la preșcolarii cu tulburare fonologică și dezvoltare tipică; stabilirea corelațiilor existente între tulburarea fonologică și vârsta psihologică a limbajului, procesele cognitive și emoționale, autoapreciere; premise ale dezvoltării scris-cititului la preșcolarii cu tulburare fonologică și dezvoltare tipică; elaborarea și implementarea unui program psiho-logopedic integrativ în vederea remedierii tulburării fonologice; aprobarea experimentală și evaluarea impactului intervenției integrative, emiterea recomandărilor pentru specialiști privind la remedierea timpurie a tulburărilor fonologice la preșcolari

**Rezultatele obținute care contribuie la soluționarea problemei științifice importante** constau în: sistematizarea științifică a datelor din cercetările de domeniu, *identificarea* (punctelor forte/slabe), a particularităților *dezvoltării* competențelor de procesare fonologică – *preachiziții/abilități* esențiale în evoluția proceselor psihice a preșcolarului de 6-7 ani; *remedierea* tulburărilor fonologice prin *elaborarea* și *aplicarea* unui program psiho-logopedic integrativ,  *direcționat* pe tulburările lingvistice, procesele cognitive și emoționale, autoaprecierea preșcolarilor cu tulburări fonologice

**Noutatea și originalitatea științifică.** Pentru prima dată, la nivel național s-a realizat un studiu comparativ experimental al copiilor preșcolari de 6-7 ani cu tulburare fonologică și dezvoltare tipică, din perspectiva identificării corelației dintre tulburarea fonologică și alte aspecte lingvistice, procesele cognitive și emoționale, și a autoaprecierii; a diferențelor de gen în manifestarea tulburării fonologice; s-a conceptualizat propria definiție a tulburării fonologice; s-a structurat un kit de evaluare pentru limbaj, procese cognitive, emoționale și autoaprecierii; s-a implementat programul psiho-logopedic integrativ orientat spre remedierea tulburării fonologice în paralel cu educarea premiselor de scriere-citire, dezvoltarea proceselor cognitive, emoționale și autoaprecierii.

**Semnificația teoretică.** Cercetarea efectuată contribuie la suplinirea fondului teoretic al științelor psihologice și logopedice cu informații referitoare la aspectul fonologic/metalingvistic în dezvoltarea limbajului la preșcolari; programul psiho-logopedic integrativ reprezintă un reper teoretic în acțiunea de stimulare/dezvoltare psihică a copilului preșcolar.

**Valoarea aplicativă a lucrării** constă în structurarea. Kitul de evaluare al preșcolarilor, util în examinarea complexă rapidă și exactă a preșcolarilor de 6-7ani; programul psiho-logopedic integrativ elaborat, implementat și validat, orientat spre remedierea tulburărilor fonologice prin considerarea altor aspecte ale limbajului, proceselor cognitive, emoționale și autoaprecierii preșcolarilor cu tulburare fonologică, poate fi preluat de specialiștii în educația timpurie și de către părinți; programul psiho-logopedic integrativ poate fi utilizat și în cadrul programelor de pregătire pentru școală a preșcolarilor sau a elevilor clasei I-i; datele teoretice, practice și concluziile cercetării pot constitui surse de documentare pentru specialiști (logopezi, psihologi, educatori), părinți; pot alcătui un ghid de bune practici pentru specialiști.

**Implementarea rezultatelor științifice.** Materialele rezultate cercetării au fost reliefate în cadrul ședințelor comune ale sesiunilor Școlii doctorale de psihologie; în materialele publicate ale conferințelor științifice, în reviste de specialitate, în procesul de formare continuă și complementară a psihologilor și logopezilor în vederea planificării activităților didactice; sunt recomandate la cursurile de Psihologie specială, Logopedie, Asistență logopedică pentru pregătirea studenților în Psihopedagogia specială și masteranzilor în Logopedie, UPSC „Ion Creangă.”

## ANNOTATION

### **Haceatrean Olesea. Psychological and speech therapy confluence in the recovery of phonological language disorders in preschoolers. Doctoral thesis in psychology. Chisinau, 2022.**

**Structure of the thesis:** The thesis consists of: annotations, list of abbreviations, introduction, three chapters, general conclusions and recommendations, bibliography of 218 titles, 4 annexes, 134 pages of basic text, 32 figures and 35 tables. The obtained results are published in 12 scientific papers.

**Keywords:** language disorder, phonological disorder, consciousness and phonological processing, phonetic-phonematic insufficiency, integrative psycho-logopedic program.

**Field of study:** Psychology of language and communication.

**The purpose of the research:** Recovery/remediation of the phonological disorder by applying the integrative psycho-logopedic program, with repercussion/impact/influence on language, cognitive, emotional processes, self-esteem and formation/education of the prerequisites for writing-reading, in preschool children aged 6-7 years.

**The expected objectives of the research:** the in-depth study of the scientific literature in the field and the description, synthesis of the analyzed scientific data; structuring assessment tools; highlighting/distinguishing the particularities of phonological disorder and gender differences in the manifestation of phonological disorder in preschoolers; identifying the level of development of cognitive processes (memory, attention), emotional (anxiety), self-esteem, prerequisites for reading and writing in preschoolers with phonological disorder and typical development; establishing the existing correlations between the phonological disorder and the psychological age of language, cognitive and emotional processes, self-esteem; premises of reading-writing development in preschoolers with phonological disorder and typical development; the development and implementation of an integrative psycho-logopedic program in order to remedy the phonological disorder; experimental approval and evaluation of the impact of the integrative intervention, issuing recommendations for specialists regarding the early remediation of phonological disorders in preschoolers

**The obtained results that contribute to the solution of the important scientific problem consist in:** the scientific systematization of the data from field research, the *identification* (strong/weak points), of the particularities of the *development* of phonological processing skills - pre-acquisitions/essential skills in the evolution of the mental processes of preschoolers of 6-7 years; *remediation* of phonological disorders through the *development* and *application* of an integrative psycho-logopedic program, *directed* on language disorders, cognitive and emotional processes, self-assessment of preschoolers with phonological disorders

**Scientific novelty and originality.** For the first time, at the national level, an experimental comparative study of 6-7-year-old preschool children with phonological disorder and typical development was carried out, from the perspective of identifying the correlation between phonological disorder and other linguistic aspects, cognitive and emotional processes, and self-perception ; of gender differences in the manifestation of phonological disorder; conceptualized own definition of phonological disorder; an evaluation kit was structured for language, cognitive, emotional and self-assessment processes; the integrative psycho-linguistic program aimed at the remedy of the phonological disorder was implemented in parallel with the education of reading-writing premises, the development of cognitive, emotional and self-esteem processes.

**Theoretical significance.** The research carried out contributes to supplementing the theoretical background of the psychological and speech-language sciences with information referring to the phonological/meta-linguistic aspect of language development in preschoolers; the integrative psycho-logopedic program represents a theoretical benchmark in the action of mental stimulation/development of the preschool child.

**The application value of the work** consists in structuring of Preschool Assessment Kit, useful in the quick and accurate complex examination of 6-7 year old preschoolers; the elaborated, implemented and validated integrative psycho-logopedic program, oriented towards the remedy of phonological disorders by considering other aspects of language, cognitive, emotional processes and self-esteem of preschoolers with phonological disorder, can be taken over by specialists in early education and by parents; the psycho-linguistic integrative program can also be used as part of school preparation programs for preschoolers or first graders; theoretical and practical data and research conclusions can be sources of documentation for specialists (speech therapists, psychologists, educators), parents; can compile a best practice guide for specialists.

**Implementation of scientific results.** The materials resulting from the research were highlighted during the joint meetings of the sessions of the Doctoral School of Psychology; in the published materials of scientific conferences, in specialized magazines, in the process of continuous and complementary training of psychologists and speech therapists in order to plan didactic activities; are recommended for the courses of Special Psychology, Speech Therapy, Speech Therapy Assistance for the preparation of students in Special Psychopedagogy and Master's students in Speech Therapy, UPSC "Ion Creangă."

## АННОТАЦИЯ

**Хачятрян Олеся. Слияние психологии и логопедии в восстановлении фонологических нарушений речи у дошкольников. Докторская диссертация по психологии. Кишинев, 2022.**

**Структура диссертации:** Диссертация состоит из: аннотации, списка сокращений, введения, трех глав, общих выводов и рекомендаций, библиографии из 218 наименований, 4 приложений, 134 страниц основного текста, 32 рисунков и 35 таблиц. Полученные результаты опубликованы в 12 научных статьях.

**Ключевые слова:** нарушение речи, фонологическое нарушение, сознание и фонологическая обработка, фонетико-фонематическая недостаточность, интегративная психолого-педагогическая программа.

**Область исследования:** Психология языка и общения.

**Цель исследования:** Восстановление/исправление фонологического расстройства путем применения интегративной психолого-педагогической программы, с реперкуссией/воздействием/влиянием на речевые, когнитивные, эмоциональные процессы, самооценку и формированием/воспитанием предпосылок к письму и чтению, у детей дошкольного возраста 6-7 лет.

**Ожидаемые цели исследования:** углубленное изучение научной литературы по данному направлению и описание, обобщение проанализированных научных данных; структурирование инструментов оценки; выделение особенностей фонологического расстройства и гендерных различий в проявлении фонологического расстройства у дошкольников; выявление уровня развития познавательных процессов (память, внимание), эмоциональных (тревожность), самооценки, предпосылок к чтению и письму у дошкольников с фонологическим нарушением и типичным развитием; установление существующих корреляций между фонологическим расстройством и психологическим возрастом речи, когнитивных и эмоциональных процессов, самооценки; предпосылки развития чтения-письма у дошкольников с фонологическими нарушениями и типичным развитием; разработка и реализация интегративной психолого-педагогической программы по коррекции фонологического расстройства; экспериментальная апробация и оценка влияния интегративного вмешательства, выдача рекомендаций специалистам по ранней коррекции фонологических нарушений у дошкольников

**Полученные результаты, способствующие решению важной научной задачи, заключаются в:** научной систематизации данных существующих исследований, *выявлении* (сильных/слабых сторон), особенностей *развития* навыков фонологической обработки - необходимые предрасположенности/навыки в развитии психических процессов дошкольников 6-7 лет; *коррекция* фонологических нарушений путем *разработки* и применения интегративной психолого-педагогической программы, *направленной* на нарушения речи, когнитивных и эмоциональных процессов, самооценку дошкольников с фонологическими нарушениями

**Научная новизна и оригинальность.** Впервые на отечественном уровне проведено экспериментально-сравнительное исследование детей дошкольного возраста 6-7 лет с фонологическими нарушениями и типичным развитием с позиции выявления взаимосвязи между фонологическими нарушениями и другими языковыми аспектами, когнитивными и эмоциональными процессами, и самовосприятие; гендерных различий в проявлении фонологического расстройства; было концептуализировано собственное определение фонологического расстройства; набор для оценки был составлен для речевых, когнитивных, эмоциональных процессов и процессов самооценки; интегративная психолингвистическая программа, направленная на устранение фонологического расстройства, реализовывалась параллельно с воспитанием предпосылок чтения-письма, развитием когнитивных, эмоциональных процессов и самооценки.

**Теоретическая значимость.** Проведенное исследование способствует дополнению теоретических основ психологических и логопедических наук сведениями, касающимися фонологического/металингвистического аспекта развития речи у дошкольников; интегративная психолого-педагогическая программа представляет собой теоретический ориентир в действии психической стимуляции/развития дошкольника.

**Прикладная ценность работы** состоит в структурировании Набора для оценки дошкольного возраста, полезный для быстрого и точного комплексного обследования дошкольников 6-7 лет; разработанная, внедренная и апробированная интегративная психолого-педагогическая программа, направленная на устранение фонологических нарушений путем учета других аспектов речи, когнитивных, эмоциональных процессов и самооценки дошкольников с фонологическими нарушениями, может быть взята на вооружение специалистами по раннему развитию и родителями; психолингвистическая интегративная программа также может быть использована в рамках программ подготовки к школе дошкольников или первоклассников; теоретические и практические данные и выводы исследований могут быть источниками документации для специалистов (логопедов, психологов, педагогов), родителей; может использоваться как практикум для специалистов.

**Внедрение научных результатов.** Материалы, полученные в результате исследования, были освещены на совместных заседаниях сессий Докторской школы психологии; в опубликованных материалах научных конференций, в специализированных журналах, в процессе непрерывной и дополнительной подготовки психологов и логопедов с целью планирования дидактической деятельности; рекомендованы для курсов специальной психологии, логопедии, логопедической помощи для подготовки студентов по специальной психопедагогике и магистрантов по логопедии, УПСК «Ион Крянгэ».

**HACEATREAN OLESEA**

**PSYCHOLOGICAL AND SPEECH THERAPY CONFLUENCES IN THE RECOVERY OF  
PHONOLOGICAL LANGUAGE DISORDERS IN PRESCHOOLERS**

**Abstract of PhD thesis in psychology**

**Speciality 511.06 – Special psychology**

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Approved for printing:  
Offset paper. Offset pattern.  
Sheet pattern 1.5

Paper size 60x84 1/16  
Circulation 10 ex.  
Order No

The Abstract was printed at Typography “.....”