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# **Interrelationship between oral and written language impairments in bilingual students**

AUTHOR'S ABSTRACT

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Prof. Dr. Tsvetanka Tsenova

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*The dissertation contains 166 standard typewritten pages of text, of which 71 pages represent the theoretical framework of the scientific work, and 85 pages represent the experimental part of the development. Included in the text are 15 tables and 36 diagrams, as well as appendices in 9 pages. The bibliography contains 108 titles (67 in Cyrillic, 37 in Latin and 4 websites).*

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## INTRODUCTION

In the modern world, the fluency of a second and sometimes a third language is becoming more and more necessary. The topic of bilingualism and second language acquisition is becoming more and more relevant, not only among professionals, but also among parents. The scientific literature comments on the influence of bilingualism on the linguistic and cognitive development of children, as well as its influence on writing and reading. There is still conflicting data and research on this. Bilingualism is known to have a positive impact on cognitive development, problem solving, creative thinking, metalinguistic awareness, and etc. But regarding its influence on some aspects of spoken and written language, there are still not enough studies. To clarify the questions surrounding bilingualism, many factors must be taken into account such as: the age at which the second language is acquired or introduced; how the second language is introduced; what is the social significance of the two languages; what is the proficiency level; as well as what is the environment in which the child grows up, as it has an extremely large influence on his language ability. Special attention should also be paid to linguistic interference between languages.

Many specialists pay attention to the research and study of bilingualism: linguists, psychologists and teachers, but recently it has been actively discussed in speech therapy communities. This is because the number of children who are bilingual in speech therapy centres is increasing, and this raises many questions related of the potential symptoms of delayed language development or difficulties in writing and reading. The number of children and students whose mother tongue is not Bulgarian is increasing in Bulgaria, and the number of children of Bulgarian emigrants is increasing abroad. The bilingual group is said to have more difficulties in school, and this can lead to them being often categorized as „children with disabilities“.

That is why it is extremely important to study and answer the question of what difficulties bilingual children face and how they can be helped to overcome these difficulties in order to have a more successful implementation. There is also uncertainty among specialists (teachers and speech therapists) regarding the assessment and diagnosis of bilingual children, as there is a lack of standardized diagnostic tools and appropriate methodologies of the literacy and education of this group of children. Children are often overdiagnosed with a language or learning disorder, and sometimes precisely because of the lack of appropriate diagnosis and therapy, the sensitive period of time is missed, in which difficulties in oral and/or written language could have been improved more easily.

Understanding and researching the processes of second language acquisition is important to ensure an accurate and precise assessment. It is important to understand when is a risk of language delay or when is an advantage and in which cases is about a language disorder or a learning disorder in this group of children.

The purpose of this scientific work is, on the basis of empirical data and conducting an experimental study, to check and evaluate the state of the spoken and written Bulgarian among bilingual students (bilinguals of Romani origin and bilinguals living abroad) and monolingual students attending 2nd and 3rd grade. The study is carried out through four tests of the spoken language and four tests of the written language. The research aims to establish whether difficulties in oral language affect writing and reading. On the basis of the obtained data, the difficulties and errors that these children make in the written language are analysed and deduced.

The object of the study are 78 students from 2nd and 3rd grade, who are divided into two groups: an experimental group of 48 bilingual students and a control group of 30 monolingual students. The monolingual group includes children attending a general school in Sofia and Kostinbrod, Bulgaria. The bilingual group includes 22 children of Romani origin attending Bulgarian schools in Sofia and the village of Butan and 26 children living abroad (Italy and Germany) who attend a Bulgarian Sunday school. The average age of children in the control and experimental groups was 8 years for 2nd grade and 9 years for 3rd grade.

The structuring of the design study was carried out in advance, with the defined objectives; the tasks are defined and the working hypotheses are derived; the research toolkit was developed; participants were selected and consent was obtained from parents for the inclusion of their children in the study. The collected data were analysed qualitatively and quantitatively and subjected to statistical processing. In accordance with the design of the theoretical-practical study, before the implementation of the experimental study, a thorough analysis of literature on the subject was carried out.

## **CHAPTER ONE. Theoretical aspects**

### **I. Definition of oral and written language**

Language is an object of study within many sciences. It has a constructive role in a human mental life and in psychology it is considered as higher cognitive function. Briefly, it can be defined as a complex and hierarchically organized system that includes abstract symbols and codes, as well as rules for combining them. By means of this language system, linguistic communication takes place in its two dimensions - generation and understanding of verbal messages. Its use and learning depend on biological, cognitive, physiological and environmental factors. (Tsenova, 2012,a).

Written language is developed at a later stage of the child's life and requires the formation of new habits. It is developed consciously and requires considerable willpower to acquire it (unlike spoken language). Its formation is based on the functional systems of the oral language and at the same time has its own neuropsychological organization. It takes place in two forms - writing and reading, which are considered as its components.

#### **1. Nature of language and speech**

The terms "language" and "speech" are concepts that are mutually related and have their own specific characteristics. Slobin (1976) describes speech as a material, physical process, the result of which are speech sounds, and language as an abstract system of meanings and language structures (by Daskalova, 2003:69,b). If language is a system that includes signs and rules, then speech is the individual application of that system. Saussure (1992) differentiates the concepts of language and speech. He believes that language is universal, while the speech process is individual (by Daskalova, 2003:83,b). In the Bulgarian, these two concepts (language and speech) are used equally, so in this scientific work oral and written speech are used as synonyms of oral and written language.

There are many and varied directions that try to explain the process of language acquisition by the child. They began in the second half of the last century and are mainly divided into: behaviorism (Skinner, 1957), constructivism (Piaget, 1954; Slobin, 1973; 1985; 1997); formalism (Chomsky, 1965), functionalism (Brunner, 1975; Halliday 1875, etc.; by Stoyanova, 2014:28). The hypotheses from which these trends are based are united around two main ideas about language development - nativism and environmentalism. Nativism accepts the existence of innate knowledge of language and innate biological potential of the child, and

environmentalism views child development as learning under the influence of environment and education. According to the behaviorist theory, language learning by the child is done through the principles of learning. This theory emphasizes the parenting environment and in particular encouragement, which can be positive or negative. In the behaviorist model of learning, feedback plays a crucial role. At the end of the 1950s, Chomsky (1959; 1965), who belonged to the formalist school, rejected the behaviorist understanding of language learning as a process of imitation. He claims that the genetic characteristics of a person play a leading role in a person's linguistic development, thus assigning secondary importance to the influence of the environment (by Stoyanova 2014:29). According to the direction of functionalism, language ontogenesis takes place as an integral part of the child's interaction with the environment. It examines and emphasizes the creative nature of this interaction and the active position of the child in it.

In general, language acquisition can hardly be described with only one single theory, since each child in his own way, strictly and individually, acquires and manifests his linguistic and communicative competence. Each person is born with the potential to acquire (understand and produce) a language, but it cannot develop without the external influences of the environment, which include: presence of verbal communication between the adult and the child; appropriate conditions for gaining sensory experience and motor activity, allowing the child to explore the world.

In order to be able to practically acquire any language as a means of communication, it is necessary to acquire linguistic knowledge, which includes: the sound composition of the word; the verbal and vocabulary richness of the language; the grammatical system as well as linguistic information that ensure communication (Georgieva: 2004).

## **2. Specifics of writing and reading**

The processes of reading and writing are complexly organized and, in order to be realized, the participation of different brain structures and various cognitive operations is necessary. If spoken speech is acquired and developed spontaneously, without conscious effort, then written speech develops secondarily, with conscious and significant efforts and in other words, an artificial way. The written language is determined by the linguistic functioning of the individual, the quality of oral speech, the skills of correct speech and articulation (Todorova, 2023:30).

Writing is associated with coding of linguistic information, in which acoustic signals, directly heard (in case of dictation) or memorized and known (in case of spontaneous writing),



are transformed into graphic symbols (Tsenova, 2012:19,b). In the formation of writing, auditory and visual modality are involved, different types of gnosia: auditory (phonemic), visual (literal), supramodal (spatial, successive, simultaneous), and this is a multi-layered activity. Manual and oral praxis are also involved in this process. And the correlation of phonemes with graphemes and the organization of motor programs for writing graphemes are activated by speech kinaesthesia (Tsenova, 2012, a).

Reading can be defined as a visual-auditory task, in which the written material is processed, arriving at the extraction of the meaning of what is written. The process of reading includes recognizing given written signs and understanding the meaning of what is written. To carry out this process, a person needs to have knowledge about the ratio between graphemes and phonemes, knowledge about the application of the syllabic principle in the relevant language and knowledge about its semantic-grammatical classification (Ignatova, 2009). Closely related to the modulation of reading processes are the structures in the cortex, thalamus and brainstem, and the more complex aspects of this complex of functions are mainly carried out by higher cortical mechanisms (Ignatova, 2009:23). Reading is influenced by vision, letter gnosia, hearing and phonemic gnosia, through which phonemes are memorized and thus general representation about them are built. Oral praxis is also important, which is visible when reading aloud (Tsenova, 2012, b).

Reading and writing are complex processes that are learned through training. They are based on language competence, which is the basis of the mechanisms responsible for the functioning of language as a sign system of semantic and grammatical rules, with the help of which we carry out linguistic encoding and linguistic decoding.

## **II. Disorders of oral and written language**

Tsenova (2012:52-53,a) note that language disorders "affect language ability as a higher cognitive, psychological ability to operate with linguistic codes and rules." In childhood, they occur as specific language disorders (SLD) or secondary language disorders. Impairments in written language "extend across the two components of written language, reading and writing, which may be equally or unevenly affected." Developmental written language disorders include: specific dyslexia and secondary dyslexia.

## **1. Specific language impairments**

Specific language impairments (SLI) is considered as a primary language disorder, with difficult to prove organic origin. According to the American Speech-Language-Hearing Association (ASHA), it is defined as “a significant impairment in the acquisition and practice of language across modalities due to deficits in understanding and/or use in any of the five language domains of functioning— phonology, morphology, syntax, semantics and pragmatics” (by Todorova, 2023:35). In the specific language impairment, all subsystems of the language suffer - fluency, understanding and practice of the language. Children with language impairments often have difficulties in using language for social purposes and in interacting with peers (Fujiki, Brinton, Morgan, & Hart, 1999; Gertner, Rice, & Hadley, 1994; by Kohnert et al., 2009).

The etiological factors for the appearance of the specific language impairment can hardly be established, because very often the organic traces are disappear thanks to the biological maturation of the child, but the language dysfunctions remain. Specific language impairments are known to be genetic in nature. However, external factors of increased importance, such as lack of communication with the child and early neurological harm, often contribute to the appearance of this disorder. (Tsenova, 2012:89, a). Some children with specific language impairments can overcome language problems or at least improve them before the start of first grade, but in others the symptoms are persistent and manifest into adolescence. It can be said that children with language impairments experience academic difficulties at school age because they demonstrate language deficits in all modalities of their language expression.

## **2.Secondary language impairments and the influence of socio-psychological factors on language development**

Secondary language impairment occurs in a larger syndrome and is only one manifestation of the syndrome's symptoms. Secondary language pathology can occur in children with intellectual disability, children on the autistic spectrum, children with genetic disabilities, sensory deficits (in case of hearing and visual impairments) or with adverse environmental influences such as social deprivation.

The reason for the appearance of language disorders in social deprivation is often related to socio-psychological factors. This may include prolonged isolation or pedagogical neglect in social care settings. The social factor has a strong influence on the general

development of the individual and, in particular, on the successful fluency of the language and implementation at school.

Inadequate social environment and severe social conditions such as poverty, prolonged illness, neglect by parents, including systematic isolation from learning and educational influences are important factors for the appearance of a disorders in the child's language and speech development. Whiteside et al. (2017) note that very often factors such as the role of the family environment, the amount of communication and functioning in it are often unexplored, and these have a particular impact especially with regard to bilingual children (by Leena, 2020). Boyanova (2012) considers that the interference that occurs in bilingual children can cause difficulties in learning the oral and written forms of communication. This may be particularly noticeable in children who are predisposed to language deficits, children with a family history that includes a parent with language delay, or in case of incidents during pregnancy. In such cases, bilingualism can be considered as one of the possible factors contributing to language difficulties.

### **3. Developmental dyslexia**

The most frequently discussed written language disorder in children is specific developmental dyslexia. This disorder is manifested by difficulties in language acquisition and phonological processing and specific difficulties in the processes of reading, writing and spelling. According to Dibrey's definition (by Tsenova, 2012:53-54,b), dyslexia is expressed in: "permanent difficulties in fluency of reading and writing in their automaticity in children with typical level of intelligence, with typical school maturity and without sensory disorders".

Part of the difficulties experienced by dyslexics are related to the construction, maintenance and retrieval of information from the phonological system; with low parameters of short-term verbal memory; the repetition of non-words; phonological learning of new verbal information; word retrieval and rapid nomination (Todorova, 2023:33). Children with dyslexia have a vocabulary that is typical of younger children and there is poor amount of antonyms and especially synonyms in their active speech. Syntactic (the interrelationships between words in a sentence) and morphological (the structure of words) patterns are poor. This aspect can lead to unclear sentences and difficulties in composing more complex grammatical constructions. Children with dyslexia have difficulty in rapid naming objects and actions, colours, letters of the alphabet and days of the week. Their difficulties may include understanding abstract concepts and more complex grammatical constructions. Non-systematic errors are also

observed in the use of pronouns, prepositions, particles and conjunctions. Composing sentences and narratives also present difficulty for these children. Sentences can be unclear, semantically confused, very long or too short and incomplete (Tsenova, 2020).

It can be said that developmental dyslexia is a complex disorder that contains a wide range of symptoms that directly affect the development of literacy and school skills of each child. Often, children with dyslexia experience prolonged failure in school, which leads to low self-esteem, anxiety, and negative changes in personality and behaviour.

This is why it is necessary for specialists to be able to distinguish clearly and early on the symptoms of dyslexia and its manifestations in order to start therapy in time.

### **III. Bilingualism**

The definition of the concept of "bilingualism" has changed over time and it is very difficult to define it due to the complexity and multi-layered nature of this phenomenon. There are different definitions in the literature, but some authors describe it as: fluency in two languages (native and non-native) and the regular switching from one to the other depending on the communication situation. According to McNamara (1969), "bilingual can be called someone who has fluence a second language in one of the four areas: speaking, listening, reading and writing" (by Kyuchukov, 2004:12).

#### **1. Nature and characteristics of bilingualism and related factors**

The acquisition of the first (native) and second languages is characterized by considerable similarity and consistency, especially when the second language occurs as natural acquisition rather than learning. But it should be considered when second language acquisition begins. Both languages will follow the pattern of acquisition of the first language when languages are acquired from 0 to 3 years of age. If the second language is introduced, after the age of three, when the child has acquired the basics of his first language, then the acquisition of the second language will proceed differently from that of the first.

The language that is learned first is called the mother tongue. This can be the mother's, father's or foster family's language. The so-called "first language" is acquired by children through active communication with those around them, and it plays a decisive role in the cognitive development of the child and in his formation as a person. Any subsequent language that is learned after the first one is called a second language.

One of the conditions for acquisition of a first and second language is communicating it. Without communication, acquisition of a second language is difficult, as there will be a lack of sufficient motivation to do so. The initial stage of independent speech production in a second language is a difficult process for the child. It is possible for children to experience a period of silence when learning a second language where the child initially focuses only on listening and understanding. Subsequently, in its linguistic expression, it can often make mistakes due to linguistic interference or the linguistic transfer of knowledge from the mother tongue to the second. Interference is described as a change in the structure or elements of one language under the influence of another, where it does not matter who is the native and who is the second. This change can occur at all levels of language (phonological, lexical, syntactic, semantic, pragmatic) and in all modalities (gestures, speaking, writing). Language transfer between the two languages can be positive or negative. Positive transfer is when both languages are similar in terms of structure, but if the first and second languages differ in terms of structure, very often this leads to errors and negative transfer.

Essential factors that must be considered for successful second language acquisition are: the age at which the language begins to be acquired, as well as the time and quality of communication with adults. The more often a child hears a particular language from different people, the better he will learn the second language (Gollan, Starr, & Ferreira, 2014; by Grosjean & Byers-Heinlein, 2018). Attention should also be paid to individual differences in language fluency such as level of language abilities, intelligence, motivation and social attitude towards speakers of the second language (Boyanova, 2012:183).

## **2. Classifications of bilingualism**

Different types of bilingualism are distinguished according to different criteria. They can be classified in terms of the following aspects: age of acquisition, social importance of both languages, level of proficiency and competences in both languages.

According to the age criterion for acquisition of a second language, early and late bilingualism are distinguished. Early (parallel bilingualism) involves exposing the child to two languages simultaneously from birth. Late (sequential) bilingualism is associated with language acquisition at a later stage due to the child moving to another country.

According to the social significance factor, complementary bilingualism and subordinate bilingualism can be distinguished. In complementary bilingualism, the new language and culture develop together with the mother tongue. Both languages enrich each

other. In subordinate bilingualism, the new language and culture are perceived as "more prestigious" than the mother tongue, which may gradually decline or be lost.

According to the factor level of proficiency and competences, balanced bilingualism and dominant bilingualism are distinguished. In balanced bilingualism, both languages are equally fluent. These are cases where the individual maintains active contacts with native speakers and speakers of the new language on a daily basis. In dominant bilingualism, one language is acquired at a higher level and more fluently than the other.

The literature also discusses the concept of "deprivation bilingualism", which is used in situations where a person for one reason or another avoids learning the new language, since it will "take away" his own language. In such cases, people see a threat to the first language when the first is presented in a superior role. (Daskalova, 2003:43, a). This is a common phenomenon among bilinguals of Romani origin.

And Kyuchukov (2004) shares that incomplete bilingualism is common in Bulgaria, as there are many Turkish and Romani children who do not speak Bulgarian well and some methods typical of foreign language learning are used in their education.

In order to form a complete bilingualism, it is necessary to separate the spheres of language use. The most famous way of such differentiation is the "principle of Ronjat" ("one person one language"), when the child speaks to his mother in the language she speaks and to his father in the language he speaks. If in a bilingual family the adults play with the child, each parent reads books in their own language, then in such a situation the child would develop actively. But if the acquisition of the two languages is carried out inconsistently and without special attention on the part of adults, this would lead to incorrect speech and would make it difficult for these children to communicate and learn (Bulba, 2006).

### **3. Bilingualism and its influence on oral and written speech**

The main question that many studies aim to answer is related to the positive or negative influence of bilingualism on the child. Some argue that bilingualism has a negative impact on a child's mental development and fluency of the mother tongue. Droop and Verhoeven (2003, by Bogdanova, 2014:167) found that bilinguals have a significantly poorer vocabulary, with a smaller number of associative semantic connections between words and with poorer morphological knowledge. Hoff (2013) and Genesee (1989) consider that bilingual education in early childhood overloads language development and confuses children. And other authors (Macnamara, Hoff) note that bilingual children develop their language skills more

slowly, because their learning capacity is divided between the acquisition of several languages (by Cobb-Clark, 2021).

Many other studies by other authors claim that bilingualism stimulates the entire learning process and the child develops his cognitive abilities faster, such as a highly developed ability for creative thinking, selective attention and earlier metalinguistic awareness. Other authors (Campbell and Sais; 1995, Lesaux and Siegel; 2003, by Bogdanova, 2014:166) consider that phonological awareness appears earlier in bilinguals and they perform more successfully in word reading and rapid naming tasks. Today, it is known that a child who is educated in two languages would have linguistic difficulties rather than intellectual difficulties (Bulba, 2006).

Some authors (Skutnabb-Kangas, 2000; Cummins, 2001, 2009, by Kyuchukov, 2018) share that gaps in knowledge of the mother tongue from preschool age are an obstacle to the acquisition of grammatical categories in the second language as well. Other data (Ransdell and Fischler, 1987; Rosselli et al., 2000; Gollan and Acenas, 2004; Gollan et al., 2005; Bialystok, 2009; Yan and Nicoladis, 2009) show that bilinguals are slower on tasks, related to naming pictures; produce fewer words on verbal fluency tasks and experience much more difficulty with lexical access (by Riva et al., 2021).

Very often, bilingual children enter school without reading skills, and for them, the formation of the reading mechanism requires a lot of patience and time. Difficulty in learning to read can be observed in these children due to their limited linguistic knowledge of Bulgarian. Bilingual children's poor vocabulary, as well as their lack of skills in writing related text, affect the acquisition of written language. Most often, bilinguals write their spoken speech without considering the requirements for correct writing. According to Mandeva and Gadjeva (2016:112), "serious barriers encountered in fluency of the written language in bilingual students are the appearing morphological and syntactic interference errors, poor vocabulary and unsatisfactorily developed speaking (and in some cases, listening skills) in the official Bulgarian as a second language". In terms of language, bilingual children can also encounter a huge difficulty in socialization and motivation.

It is clear that for a child to be socialized and integrated, his vocabulary must be sufficiently developed in the mother tongue and in the official language of the country. The basis for the successful literacy of bilingual students is good oral speech. If the children understand well what is said to them and have a developed vocabulary in Bulgarian, they will more easily become literate.

The process of fluency of the Bulgarian is complex and difficult, and diagnosing the degree of its development is even more complicated. That is why it is extremely important to study the bilingualism of children in the Bulgarian population and conditions.

#### **4. Interrelationship between bilingualism, specific language impairments and developmental dyslexia**

The interaction between specific language impairment (SLI) and bilingualism is controversial. It has been argued that bilingualism may have an impact in children with specific language impairment, but not in all domains of language (Ruberg et al., 2020). Some authors have argued that children with SLI and typically developing bilinguals may have similar developmental pathways in the early stages of grammatical acquisition (by Kohnert et al., 2009). Vasileva and Kutsianas (2022) share that children with specific language impairments (SLI) often have similar deficits at the morphological and lexical level to their bilingual peers, and that in children with successive-type bilingualism there is evidence of worse grammatical and lexical achievement. According to Wangle et al. bilingual children have a 12 times higher risk of language delay than monolinguals (Wangle et al., 2021). Nayeb et al. (2021) conducted a study and found that specific language impairment was three times more common among bilingual children than among monolingual peers. Bilingual children were also at higher risk of severe language difficulties compared to monolingual peers. The children in this study were assessed in both their languages and the risk of overdiagnosis is minimal. The authors consider that the high prevalence of language impairment may be related to the difficulty of migrant families to integrate into society. They concluded that almost one in three bilingual children who grew up in a low socioeconomic environment showed language impairment. Low socioeconomic status is considered a factor affecting children's language and cognitive abilities. They conclude that screening and diagnosis should always be conducted in both languages used by the child, especially if the child fails the screening in one of the languages.

If children have difficulties with reading and writing in their native language, they will most likely encounter the same, even more serious difficulties in fluency of a foreign language. If students have dyslexia, the difficulties in acquiring a new language may increase because learning a second language requires skills similar to those needed to acquire the native language. The difficulties encountered in learning the native language would be transferred to the foreign language. And dyslexia would occur in both languages and affect a child's ability to learn to read in both languages (Grosjean, 2019). It is not always easy to tell whether a second



language learner's difficulty learning to read comes from a reading disorder or whether he needs more time to fluence reading. Again, many factors that would affect reading fluency must be considered such as: health problems, emotional problems related to immigration, intellectual development, etc.

In summary, it can be said that if children have a language disorder in their mother tongue, they will also have one in the second language. In specific language impairment, language is affected in all its aspects, while in bilingualism, the given language may suffer only in some aspects, but this does not mean that the child has a specific language impairment. Rather, it is possible to have the so-called "pseudo-language or secondary language impairment" that is not the result of organic and internal factors, but is related to external or functional causes, such as the social environment.

This is why it is important to specify the influence of bilingualism on children's language development in order to derive criteria for differential diagnosis with cases of language pathology.

## **CHAPTER TWO. Research Agenda**

### **1. Objectives, tasks and hypotheses**

The focus of this study is the oral and written language deficits of bilingual 2nd and 3rd grade students.

**The following objectives, tasks and hypotheses of the research are derived:**

**Purpose of the study:** To check and evaluate the state of the oral and written language of bilingual and monolingual students of the 2nd and 3rd grades and to determine whether the difficulties in the oral language (Bulgarian - if any) affect the fluency of writing and the reading.

**In accordance with the purpose, the following tasks of the research were defined:**

1. Selection of methods adequate for the purposes of the experiment for researching the language and writing ability of bilingual children and monolingual children from the same grade.
2. Formation of an experimental - bilingual and control - monolingual group, in which to examine the oral and written language.
3. Conducting an interview with the teachers of the bilingual students of Romani origin and conducting a survey with the parents of the bilinguals living abroad.
4. Study of the state of oral and written language in the experimental and control groups.
5. Evaluating and analysing quantitatively and qualitatively the information collected from the research and from the conducted survey.
6. Comparing the state of oral language among students with and without bilingualism (between groups).
7. Comparing the state of the written language in children with and without bilingualism (between groups).
8. Comparing the state of the written language among monolinguals, bilinguals of Romani origin and bilinguals living abroad.
9. Comparison of oral and written language in children with and without bilingualism (within group).
10. Assessing and comparing the interrelationship between tests and oral and written language achievement in the two groups.
11. Deduction and description of errors made in the written language.
12. Reaching conclusions and making recommendations with a practical focus.

### **Hypotheses:**

Based on the studied literature, the following hypotheses can be defined:

**Hypothesis 1:** The oral Bulgarian language in bilingual children suffers in comparison with the language of their peers from the general population.

**Hypothesis 2:** The Bulgarian language in written form among bilingual students is more affected compared to their oral language.

**Hypothesis 3:** There is a interrelationship between oral and written language in the experimental (bilingual) and control (monolingual) groups, and oral language success affects written language acquisition.

## **2. Study participants**

**Study subject:** The subject of this study is to research oral language deficits through four tests and to research written language deficits through four tests that examine reading and writing in bilingual 2nd and 3rd grade students.

**The object of the study are** 78 students from the 2nd and 3rd grades, who are divided into two groups: an experimental group of 48 bilingual students and a control group of 30 monolingual students. The monolingual group includes children attending a general school in Sofia and Kostinbrod, Bulgaria. The bilingual group includes 22 children of Romani origin attending Bulgarian schools in Sofia and the village of Butan and 26 children living abroad (Italy and Germany) who attend a Bulgarian Sunday school. Bilinguals from Italy and Germany were studied, as they have a large number of Bulgarian Sunday schools. Bilingualism in children of Romani origin is defined as incomplete, sequential bilingualism. In children living abroad, parallel (early) bilingualism and sequential (late) bilingualism are observed.

The average age of children in the control and experimental groups was 8 years for 2nd grade and 9 years for 3rd grade. Based on the anamnestic data collected through interviews with the teachers of the students living in Bulgaria and the parents of the children living abroad, no persons with special educational needs or persons diagnosed with language disorders and learning difficulties were found in the groups. Each child is examined individually in a quiet and peaceful environment.

### 3. Methodology and procedure of the study

The methodology includes four tests for the study of the oral language and four tests for the study of the written language. The experimental test was carried out by the following methods:

#### **- Tests to examine the state of the oral language:**

##### **Test 1 – Enumeration of objects from one semantic circle in 1 minute**

The purpose of this verbal (semantic) fluency task is to assess the process of retrieving information from the lexicon and semantic memory for the category animals. The test is related to the assessment of lexical knowledge and is taken as an indicator of vocabulary. The category animals was chosen because it is the most commonly used (Tombaugh et al., 1999, by Brandeker & Thordardottir, 2023) and because it is culturally neutral and known both at home and in school. This test and the rating scale are borrowed from Tsenova's Oral Language Test Battery (2012:189, b).

Evaluation: Depending on the range emerging between the lowest, minimum number of answers made by the participants and the maximum (highest) number of answers made (on listed objects), a 3-component rating scale with 1 , 2 , 3 points is created.

1 TEST	SCORE	POINTS
LOW	0-10 words	1 point
MEDIUM	10-20 words	2 points
HIGH SCORE	20 – 30 words	3 points

##### **Test 2 – Choosing the correct missing first word (preposition) in a sentence**

In this test there are four incomplete sentences with a missing first word (preposition) to examine the level of use and understanding of prepositions. The test was taken from a test battery for oral language research by Tsenova (2012:189, b).

Scoring: 1 point for each correct answer and 0 for each wrong answer.

Total correct answers: 4

### **Test 3 – Completing the missing last word in sentences**

This test is again borrowed from the test battery for oral language research by Tsenova (2012:189, b). Only the sentences have been changed. The purpose of the test is to complete sentences with the last word missing in meaning.

Scoring: 1 point for each correct answer and 0 for each wrong answer.

Total correct answers: 4

### **Test 4 – Selection of synonyms for words named by the researcher.**

Four words were selected for this test: two adjectives and two nouns. The test is borrowed from a test battery by Tsenova (2012:189, b), with some of the words changed. The goal is to come up with and say one synonym for each chosen word.

Scoring: 1 point for each correct answer and 0 for each wrong answer.

Total correct answers: 4

## **Tests of the written language:**

### **- Tests of reading**

#### **Test 1. Reading and understanding of sentences followed by illustrations**

For the implementation of this test, 5 sentences and 3 pictures with similar content to each sentence are prepared for reading, only one of which corresponds to the sentence. It is read, after which the three similar pictures are placed in front of the child. Each sentence must be matched to the corresponding picture by the child pointing to it.

Evaluation of decoding in reading sentences: correctly read sentence without any reading errors - score 2 points; a partially read sentence with more than 2 errors involving a misread word (omissions or substitutions of words, omissions or substitutions of letters; breaking or merging with the next word) - 1 point; completely unread sentence - 0 points.

Maximum points: 15

#### **Test 2. Reading and understanding a small text**

A short reading text is prepared for this test. The test and the text were selected from a diagnostic album for speech therapists (Boyanova et al., 2018:179). The children must read the short text and then answer the questions after it.

Assessment: A correctly read text and understanding of what has been read is assessed.

Assessment of reading: For each correctly read word – 1 point; for an incorrectly read word - 0.

Evaluation of the understanding of the sentences: for each correct answer to a question - 1 point, for an incorrect answer - 0 points.

Maximum points: 37 for correct reading of the text and 4 for correctly answered questions.

Total maximum points: 41.

### **- Writing tests**

Data from this part of the study is drawn from the written output of the participants, which is collected and analysed later.

#### **Test 3. Independent writing of sentences followed by illustrations**

10 pictures are prepared, each of which has a clear and unambiguous image of an object performing some action. The children have to make a sentence for each picture.

Evaluation: each grammatically and meaningfully written sentence describing the picture is evaluated with 1 point; an incorrectly written sentence, regardless of the number of errors or an unwritten, omitted word, receives 0 points. This task takes into account the grammatical correctness of the sentences, the length of the generated sentence and the adequacy of the written sentence to the picture.

Maximum points: 10

#### **Test 4. Writing a text under dictation**

The collection of the necessary information is carried out using the text dictation method. The dictations are taken from a diagnostic album for speech therapists (Boyanova et al., 2018:181) and are age-appropriate and the requirements for the volume of calligraphically correctly written text.

Assessment: The number of correctly spelled words in the text is assessed. Each correctly written word is evaluated with 1 point, and each addition of a word; wrong, omitted word or words; replacing, rupturing, deforming or merging words; missing letter or syllable in a word; capital letter omitted; spelling and punctuation inaccuracies are assessed with 0 points. Based on the number of errors, an individual and group score is formed. For each error, the rules of language, spelling and graphology are taken into account.

Maximum individual points for 2nd class is 26, and for 3rd class 54.

#### **4. Statistical analysis methods**

For each participant's parent was prepared Informed consent form.

An electronic survey has been prepared for parents of children living abroad to collect additional information. It includes questions exploring the family environment in which the child lives; the quality of communication in Bulgarian; frequency of communication; level of proficiency in the Bulgarian language; whether and how long the child spends in Bulgaria; and what is the child's desire and motivation to speak Bulgarian.

For the bilingual children of Romani origin, information was collected by conducting an interview with their primary teachers.

The main research method through which the empirical data is arrived at is an analysis of the oral and written production of the 2nd and 3rd grade students. All data from the test battery, which includes both oral and written language testing, are subjected to primary mathematical processing, which are reduced to individual and group scores. The results are subjected to quantitative and qualitative analysis and statistical processing to prove the significance of the obtained results.

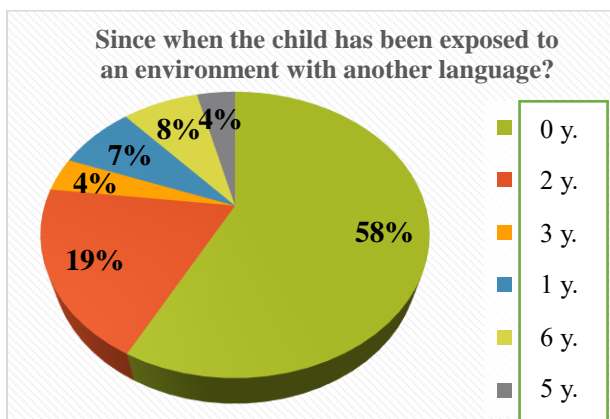
Statistical processing was done by IBM SPSS Statistics and includes: comparative percentage analysis of results between groups and within groups, descriptive statistics analysis including: mean value, median and standard deviation. For greater clarity, the data is presented graphically through histograms and pie charts. Cronbach's Alpha was used to prove the reliability of the tests, Student's T-test, correlation and one-way analysis of variance (ANOVA) to establish the statistical significance of the results and the correlation between them. Additionally, an anamnestic method element was applied in the part of the study that required gathering more information about the bilingual students from their parents and teachers.

## CHAPTER THREE. Analysis of results

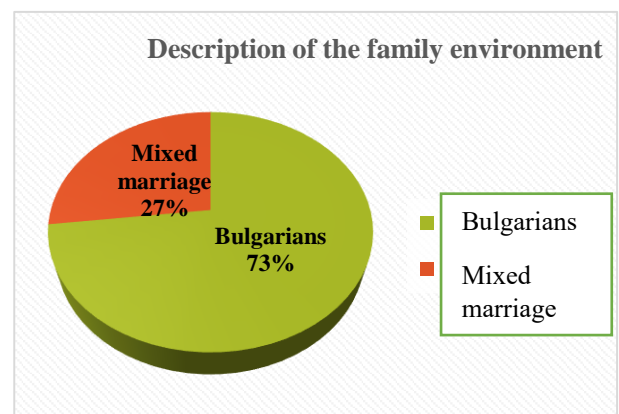
### 1. Quantitative and qualitative analysis of a questionnaire of parents of bilinguals living abroad and information on bilinguals of Romani origin

The conducted survey was completed by 26 respondents. It aims to study the environment in which bilingual children living abroad live, as well as the level of communication in their Bulgarian. Diagram 1 shows the answers to the question "Since when the child has been exposed to an environment with another language?". It can be seen that 57% of children are born abroad and are exposed to another language from birth. 19% had exposure to another language at 2 years of age, 8% at 1 and 6 years, and 4% at 3 and 5 years. The majority of children are exposed to two languages between the ages of 0-3, which suggests that they should have fluency both languages well enough. Their bilingualism is early, parallel. It can be said that they learned the second language at the same time as the first.

Diagram 2 shows in percentages the family environment in which bilingual children grow up. It shows that the majority (73%) of the children live in a family with a Bulgarian mother and father, and only 27% in a mixed marriage in which the mother is Bulgarian and the father is a foreigner. For the majority of the studied group, the language spoken at home or the so-called mother tongue is Bulgarian, and the second language (the official one for the country) is most likely learned in kindergarten and school.



*Diagram 1. Since when the child has been exposed to an environment with another language? (percentage values)*



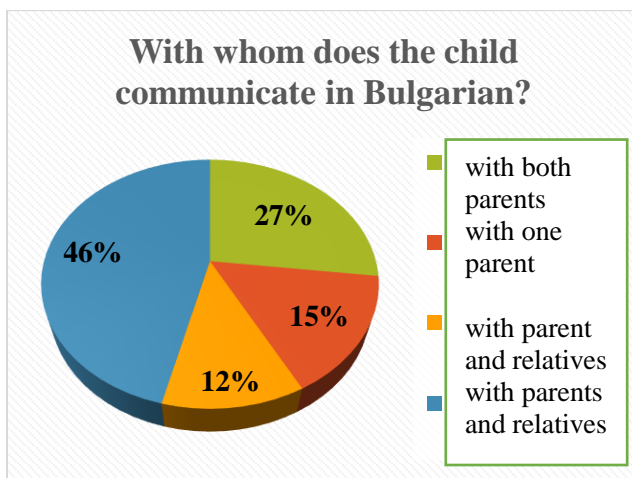
*Diagram 2. Family environment in which bilingual children live (percentage values)*

In diagram 3, we see in a little more detail in percentages with whom the children most often communicate in Bulgarian. The largest percentage (46%) are children who

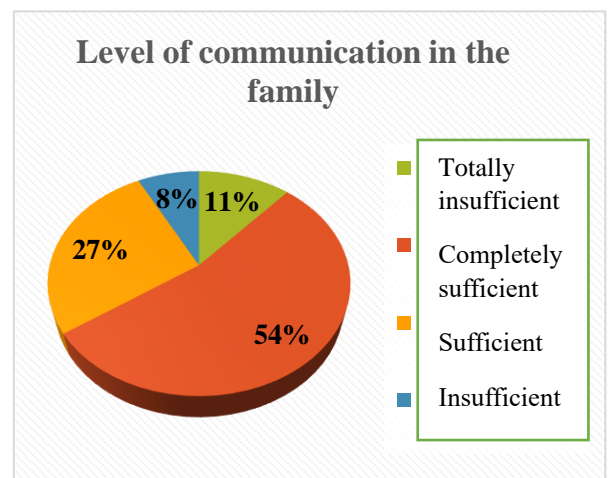


communicate in Bulgarian with their parents and relatives (which most often include grandmother, grandfather, brother, sister). They are followed by children with 27% who communicate in their mother tongue only with their parents. And only 15% and 12% communicate with one parent or with one parent and relatives, which shows that they are exposed to the Bulgarian language less than the rest of the children.

Diagram 4 shows the results of the question "How would you rate communication in Bulgarian in your family?". Half of the respondents (54%) think that communication in Bulgarian is "completely sufficient" and 27% think it is "sufficient", which means that the "input" in Bulgarian that these children receive is satisfactory. 11% and 8% of the surveyed parents believe that the language environment they provide in Bulgarian is insufficient.



*Diagram 3. Communication in Bulgarian in the family environment (percentage values)*

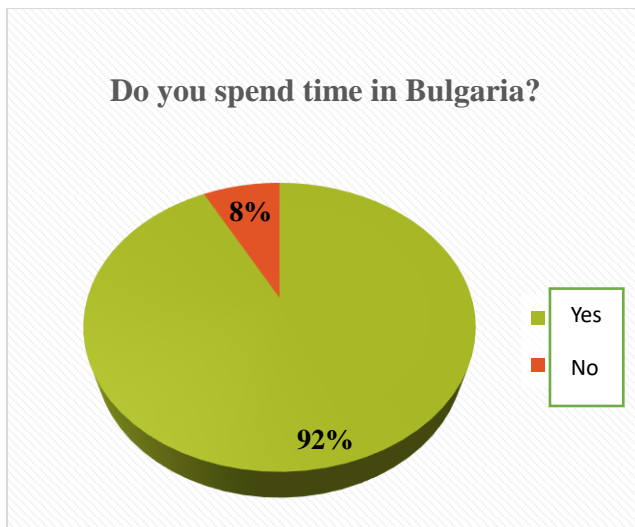


*Diagram 4. Level of communication in families of bilingual children (percentage values)*

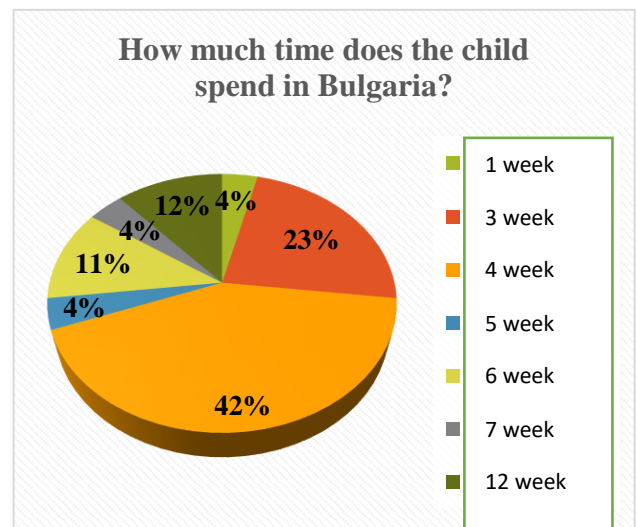
In order to continue the research more deeply we asked whether the children spend time in Bulgaria. Diagram 5 shows the data from the respondents' answers in percentages. 92% of all children spend time in Bulgaria and practice their mother tongue, and only 8% do not spend enough time in Bulgaria. It can be said that this is a very good factor that should influence the sufficient fluency of the language in its oral form.

And how much time (in weeks) the children spend in their native country, we understand from diagram 6. The largest percentage (42%) spend 4 weeks total in Bulgaria per year, or in other words 1 month, then with 23% are the children, who spend 3 weeks in Bulgaria. 12% of children spend 12 weeks (3 months, mostly in the summer), 11% of children spend about 6 weeks (about a month and a half) and about 4% spend either 7 weeks or 1 week. The distribution here is a little more diverse, but it can be said that a little more than half of them

visit Bulgaria for at least 3 weeks a year, which is a very good prerequisite for practicing the Bulgarian language. Contacts with Bulgaria and staying with relatives (grandparents and other relatives) are a very important factor for the maintenance and "survival" of the Bulgarian language among the children of Bulgarian emigrants.



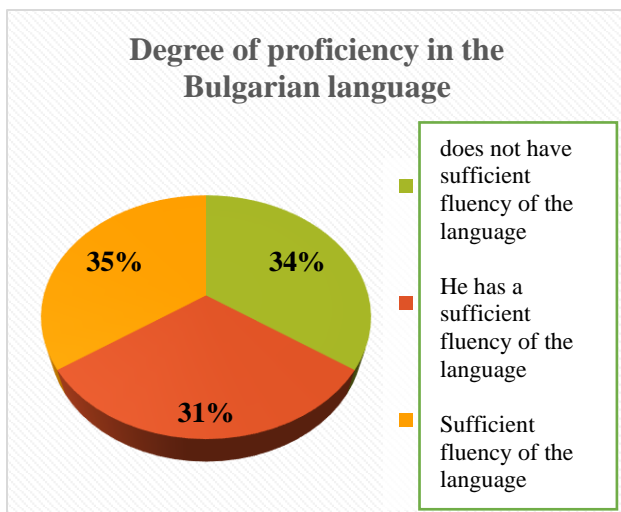
*Diagram 5. Stay of bilingual children in Bulgaria (percentage values)*



*Diagram 6. Amount of time in weeks spent in Bulgaria expressed as percentage values*

According to the parents, the children's oral Bulgarian language proficiency is not sufficient. Diagram 7 shows that the majority of them (35% and 34%) think that the children have an average fluency. There are no parents who think that their children do not know the Bulgarian language. 31% of them think that their children know their mother tongue sufficiently. It can be said that the communication in Bulgarian language in the families is sufficient, as well as the stay in Bulgaria, and despite this, the children do not know their mother tongue sufficient.

The last question we asked the parents aimed to explore whether the children have the motivation to speak their mother tongue. Diagram 8 shows that the majority of children with Bulgarian as their mother tongue (54% and 34%) have a desire to communicate in the language, and only 4% and 8% have no such desire. This is most likely due to the fact that the parents of bilingual children make a special effort to maintain and preserve the native language, as well as the fact that these children attend Sunday school once a week.



*Diagram 7. Degree of Bulgarian language proficiency of bilingual children expressed in percentage values*



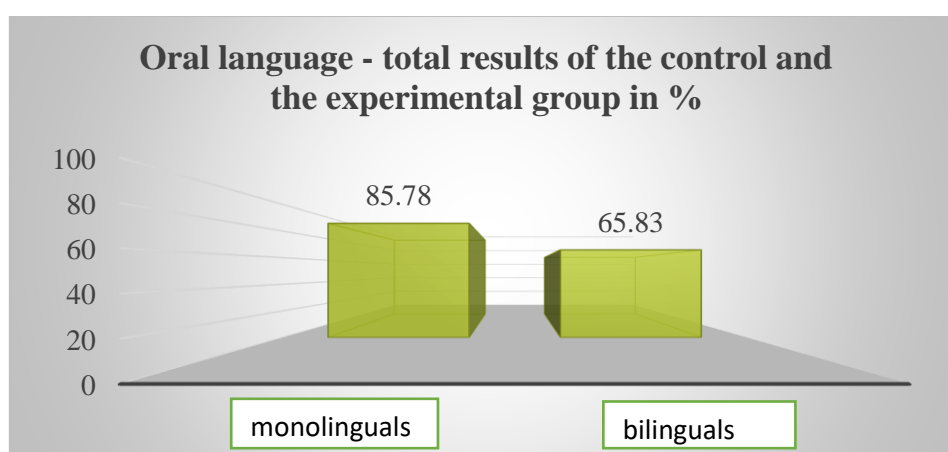
*Diagram 8. Bilingual children's desire to communicate in Bulgarian (percentage values)*

Despite the results, which show a high percentage of willingness to communicate in Bulgarian, many of the parents shared that the children have more difficulty with the Bulgarian, which is their mother tongue, and prefer to speak in the official language of the country. Parents say that during break in the Bulgarian Sunday school, the children prefer to communicate in German or Italian with their friends. It can be said that the native Bulgarian language of these children suffers, and their knowledge of the Bulgarian language become poor, as they prefer the second language, which for them is dominant.

As for the information we received from the pedagogical specialists working with bilinguals of Romani origin, it is known that the children attend school in a daily basis and are willing to communicate in the Bulgarian language, but the parents are not very involved in the educational process and there are periods of absence for these children. In these cases, it is necessary to send a mediator to work with the families. According to the teachers, some of the children speak Romani at home, while others communicate in a mixed way - they use both Romani and Bulgarian. The children are educated only in Bulgarian. They only know the Romani language orally. At school, these children are willing and strive to speak Bulgarian with their classmates.

## 2. Comparative analysis of the total result of the oral language tests between the experimental group and the control group

In terms of oral language, bilinguals' scores are lower than those of monolingual peers. These are expressed as percentages in Diagram 9, which shows that monolinguals have an 85.78% success rate, while bilinguals have 65.83%. The experimental group has a worse performance than the control group. This is because part of the students living abroad, the official language of the country is dominant, while the mother tongue (Bulgarian) is practiced only at home or with relatives when the children visit Bulgaria. As for the bilinguals of Romani origin, the situation is vice versa. The Bulgarian language should be their dominant language and they should be better at it, but this is not the case.

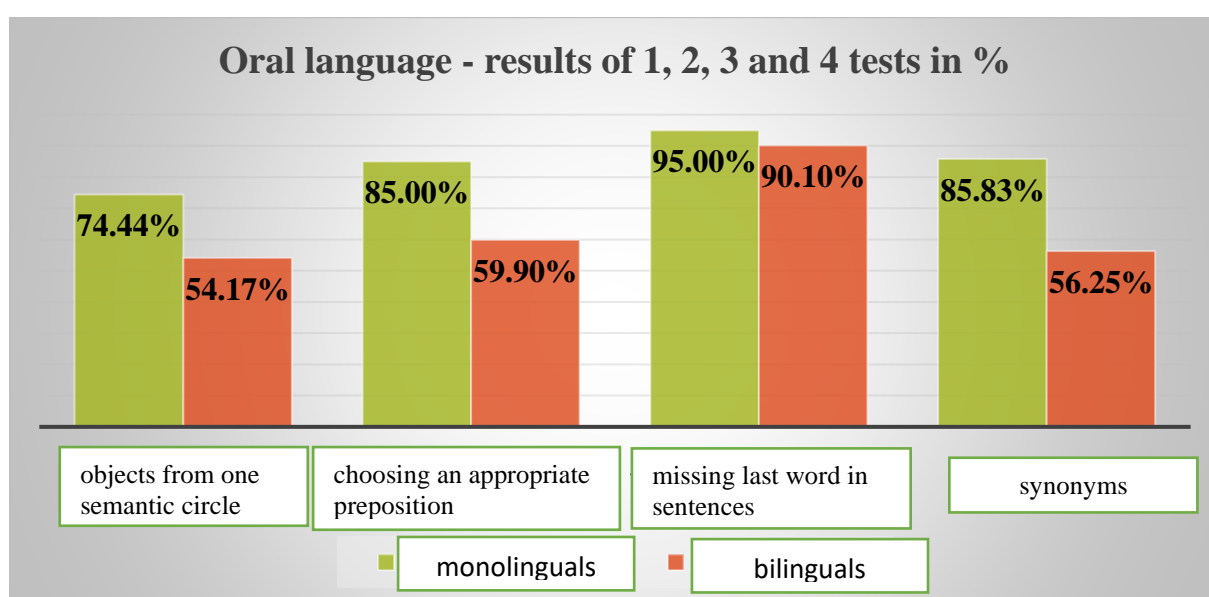


*Diagram 9. Total scores for all spoken language tests in percentages (monolinguals and bilinguals)*

In Diagram 10, the spoken language results are divided particularly in test shown in percentages. It clearly shows which are the most affected areas in both groups. For bilinguals, the task of listing objects from one semantic circle (animals) turns out to be the most difficult. They (54.17%) were able to list fewer animals than their monolingual peers (74.44%). In this test, it is interesting to note that many of the children included "dinosaur, unicorn, or Capricorn" when listing animals, which may indicate that the children's categorization skill is most likely not fully developed. In addition, foreign bilinguals also showed code-switching during test performance, as well as slower naming and retrieval of words from semantic memory. The next tests they had the most difficulties is the selection of an appropriate preposition (59.90%) and the synonyms task (56.25%).

The most recent errors were in the preposition task with the preposition 'through' and 'behind'. Also, in one of the sentences there was a word that many bilinguals living abroad did

not know the word "halm". The children associated the meaning of the word with 'noise' rather than with 'a collection of leaves in one place'. The examiner had to explain the word before performing the test. As for synonyms (56.25%), which show the richness of vocabulary, it is found that in bilingual children, they are poorer compared to their monolingual peers (85.83%). The subjects had the greatest difficulty in coming up with synonyms for nouns, namely the words "flag" and "bottle". Of all four tests, both groups performed best on the sentence completion test in which the last word was missing. Monolinguals have 95%, and bilinguals 90.1%. The differences between the two groups are not very large and can be interpreted as insignificant.



*Diagram 10. Results between bilinguals and monolinguals of tests 1, 2, 3 and 4 for oral language in percentages*

Table 1 presents the mean value, median, and standard deviation of mean scores between monolinguals and bilinguals. It can be seen that the average value of the obtained results of the bilinguals over all tests as well as in terms of the total score is lower (9.89) compared to that of the monolinguals (12.87). Larger differences are again seen on the verbal fluency test scores, the prepositions task, and synonyms. In test 3. Filling in the last missing word in sentences, the average values for both groups are very close – 3.8 for the monolinguals and 3.6 for the bilinguals.

*Table 1. Mean value, median and standard deviation expressed as a point score for oral language (bilinguals and monolinguals)*

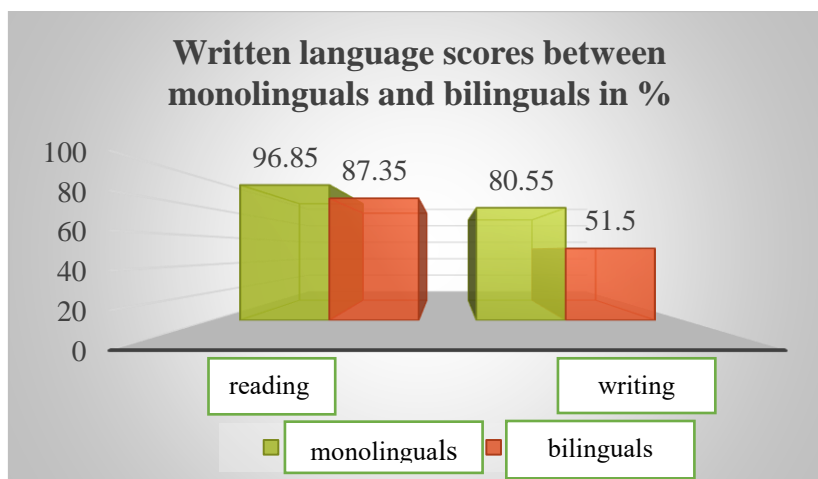
	Mean value		Median		Standard deviation	
	monolingual	bilingual	monolingual	bilingual	monolingual	bilingual
<b>Test 1</b>	2.23	1.64	2	2	0.49	0.52
<b>Test 2</b>	3.4	2.38	3.5	2	0.66	0.98
<b>Test 3</b>	3.8	3.6	4	4	0.4	0.67
<b>Test 4</b>	3.43	2.28	4	2	0.92	1.25
<b>Total results</b>	12.87	9.89	13	10	1.61	2.32

Student's t-test results demonstrate statistically significant differences between the two groups for oral language. Between oral language scores for the verbal fluency tasks ( $t=5.018$ ;  $p=0.000$ ), preposition selection tasks ( $t=4.910$ ;  $p=0.000$ ) and synonyms ( $t=4.424$ ;  $p=0.000$ ), including total scores ( $t=6.668$ ;  $p=0.000$ ) from all tests, statistically significant differences between the experimental and control groups were demonstrated. Statistical significance of the result is not proven only for test 3, which is related to completion of the last missing word in sentences, where  $t= 1.597$ ,  $p=0.114$ . This is because both groups' scores on this task are very close to each other.

From the obtained data, it can be concluded that bilinguals lag behind monolinguals, but not on all tests. They had the most recent errors in the verbal fluency task, followed by the synonym task and finally the prepositional task. As for the test required to complete the last word in a sentence, their score was very high and did not differ significantly from that of the monolingual group.

### **3. Comparative analysis of the total result of the reading and writing tests between the experimental and control group**

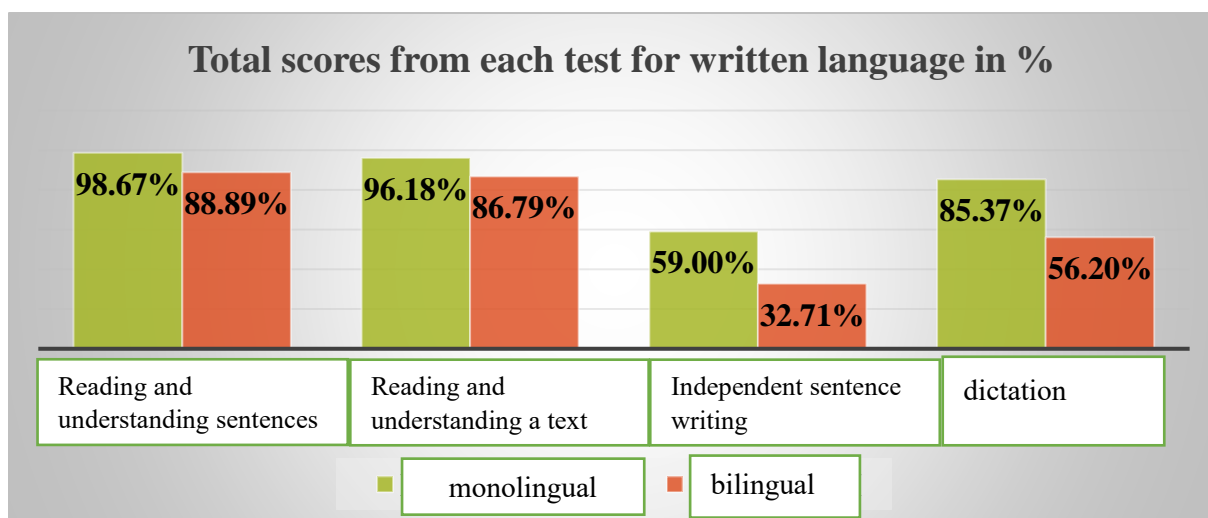
In terms of written language, the bilinguals' scores were not much different from those for spoken language. Diagram 11 shows the results for written language both reading and writing. In reading, the success rate of bilinguals is significantly higher than writing. It is clearly seen that writing (51.5%) is more affected in bilinguals than reading (87.35%). From the obtained results related to written production, it is found that bilinguals (51.5%) significantly lag behind monolinguals (80.55%). For both bilinguals and monolinguals, reading performance increased compared to writing performance. There was little difference in the scores obtained on the reading tests between the two groups.



*Diagram 11. General I results of written language expressed in percentages between experimental and control group*

In Diagram 12, the written language scores are examined and compared between the two groups for the different tests. Again, the differences between the experimental and control groups are seen. Both groups had the best results in the test for reading and understanding sentences. Monolinguals have 98.67% and bilinguals 88.89%. The experimental group had slightly lower scores on the reading comprehension test of a short text. Again, monolinguals do better with 96.18% compared to bilinguals 86.79%, but the difference between their scores is small. Here, in both groups, the success rate has decreased compared to the first test. It is important to note that the bilingual children understood what was read and were able to answer the questions, but with one word or very short sentences. In addition, there was again a word whose meaning the bilingual children did not know - the word "greedy". This made it difficult for them to answer the last question.

In the writing tests, the performance of both groups decreased compared to that of the reading. Subjects were better at writing under dictation than at writing independent sentences from pictures. Monolinguals have an 85.37% success rate, while bilinguals have a 56.20% success rate. Both groups have the lowest success rate in the test for independent writing of sentences on a picture. Monolinguals have 59%, while bilinguals 32.71%. The results show that bilinguals significantly lag behind monolinguals.



*Diagram 12. Comparative analysis of total results from each test for written language expressed in percentages (bilinguals and monolinguals)*

In the written production of the bilingual children, it is noticeable that the sentences are poorer and shorter compared to those of the monolinguals. Also, some of the bilingual children's sentences were written by 1st p. singular, and others sounded like titles and the subject was missing. Bilingual children needed more time to complete the test. The errors that the bilingual children made in Test 3, involving independent sentence writing, and Test 4, involving writing under dictation, were at the sentence, word, and grapheme levels.

The errors observed at the sentence level are: word omissions; merging of conjunctions, prepositions and particles with subsequent or preceding words; punctuation errors, lack of capital letters or their use in an inappropriate place; spelling inaccuracies such as the reduction; errors in the use of the full and short article. The errors that are observed at the level of word and grapheme are: elisions - omissions of letters at the beginning of the word or in the middle of the word or dropping letters due to clustered consonants; omissions of syllables; paragraphs - replacement of letters on a visual, articulatory or phonetic principle. Grammatical substitutions of words are also observed - the word is replaced by its grammatically incorrect word form.

Table 2 shows the differences for each test between the two groups in terms of mean value, median, and standard deviation, expressed as a point score. In all four tests, the increase in success according to the mean value criterion was greater among monolinguals. Again, bilinguals had significant mean value differences on the picture sentence writing test and the dictation test compared to monolinguals. The most visible difference is in test 4 Dictation. According to general results, it can be seen that on average arithmetically 98.27 of the monolinguals completed all the tests very well and only 74.67 of the bilinguals. Both the median



and the mean value indicate that written language is more affected in bilinguals than in monolinguals, and this is most evident in the writing tests.

*Table 2. Mean value, median and standard deviation expressed in point score for written language (bilinguals and monolinguals)*

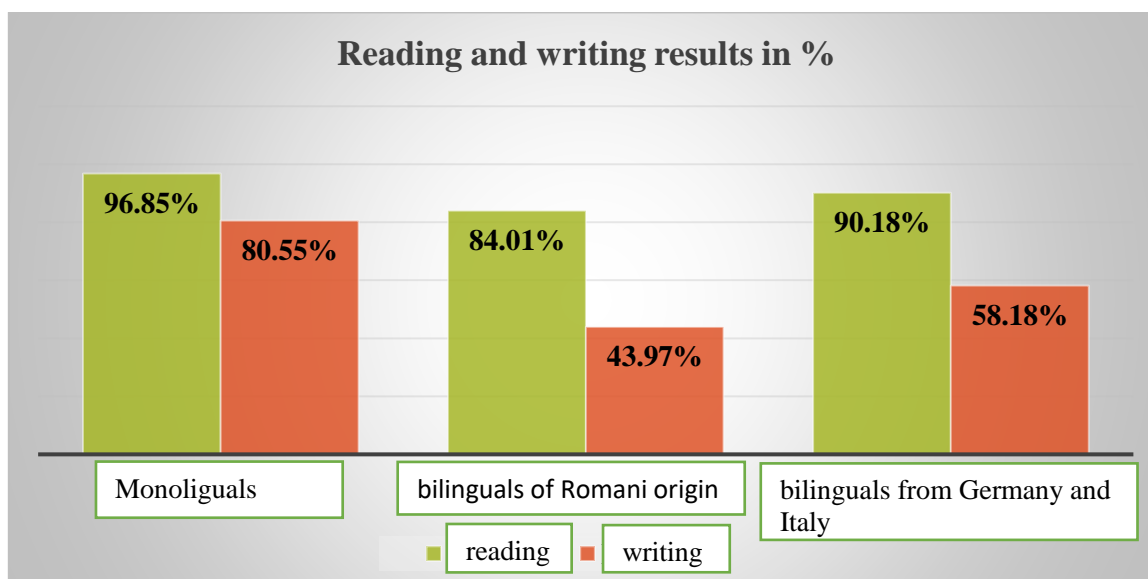
	Mean value		Median		Standard deviation	
	monolingual	bilingual	monolingual	bilingual	monolingual	bilingual
<b>Test 1</b>	14.8	13.33	15	14	0.47	2.61
<b>Test 2</b>	39.43	35.58	40	39	2.12	9.68
<b>Test 3</b>	5.9	3.27	6	4	2.19	2.03
<b>Test 4</b>	38.13	22.48	44	19	12.34	14.33
<b>Total results</b>	98.27	74.67	100.5	75.5	13.98	23.73

Student's t-test results demonstrate statistically significant differences between the two groups for written language. Between the written language scores for the tasks related to reading comprehension of sentences ( $t=3.754$ ;  $p=0.000$ ), reading and comprehension of a short text ( $t=2.625$ ;  $p=0.011$ ), writing sentences from pictures ( $t=5.324$ ;  $p=0.000$ ) and writing under dictation ( $t=4.882$ ;  $p=0.000$ ) including the total scores ( $t=4.875$ ;  $p=0.000$ ) of all tests showed statistically significant differences between the experimental and control groups.

In conclusion, it can be said that the writing tasks are the most difficult, both for the experimental and control groups. In bilinguals, both reading and writing were more affected than in monolinguals, with a significant difference between the two groups in test 3 Independent writing of picture sentences, and test 4 Writing under dictation.

### **3.1. Comparative analysis of the total result of the reading and writing tests between the control and experimental groups, including bilinguals of Romani origin and bilinguals from abroad**

Since the bilinguals group consists of two subgroups: bilinguals of Romani origin and bilinguals living abroad, in Diagram 13 there are differences between the three groups in reading and writing. In the reading tests, the group of bilinguals of Romani origin had the lowest scores (84.01%), while bilinguals living abroad did slightly better (90.18%). With the best result are monolinguals with 96.85%. In writing, the bilinguals of Romani did the worst again with 43.97%. Bilinguals living abroad performed better on writing tasks by 58.18% compared to their Romani peers. Comparatively, it can be seen that there is a significant difference between reading and writing in both bilingual groups. Writing is difficult for both groups, with Romani bilinguals having significantly more difficulty.



*Diagram 13. Comparative analysis of reading and writing results in percentages - monolinguals, bilinguals - Romani and bilinguals - abroad*

A between-group one-way analysis of variance (ANOVA) revealed a significant difference and statistical significance in the scores of all three groups for all reading and writing tests, which included reading and comprehension tasks with picture sentences ( $F=4.608$ ;  $p=0.13$ ); reading comprehension of a short text ( $F=3.712$ ;  $p=0.29$ ); writing sentences on a picture ( $F=14.798$ ;  $p=0.000$ ); and writing under dictation ( $F=12.909$ ;  $p=0.000$ ). A statistically significant value between the three groups was also found for the general written language scores ( $F=13.345$ ;  $p=0.000$ ).

It is found that reading and writing are better among children living abroad, for whom the Bulgarian language is mother tongue, while bilinguals Romani experience greater difficulty. The lower success rate and low results of bilinguals children of Romani origin are most likely due to socio-economic and cultural factors (these children are bicultural and speak two languages and two cultures at the same time), as well as the so-called group risk factors in the literacy process such as low family income, lack of motivation to learn the language, use of dialect, irregular school attendance and insufficient parental involvement in the educational process. In addition, the so-called school bilingualism, which is related to fluency of the language in entering school. Then the language is acquired on the basis of the first (native) language. A common phenomenon among children of Romani origin, as well as among their parents, is that they see a threat to their language in the face of Bulgarian, believing that it has a "superior" role and therefore avoid learning it. In the literature, this phenomenon is considered as "depriving" bilingualism (Daskalova, 2003:43, a).

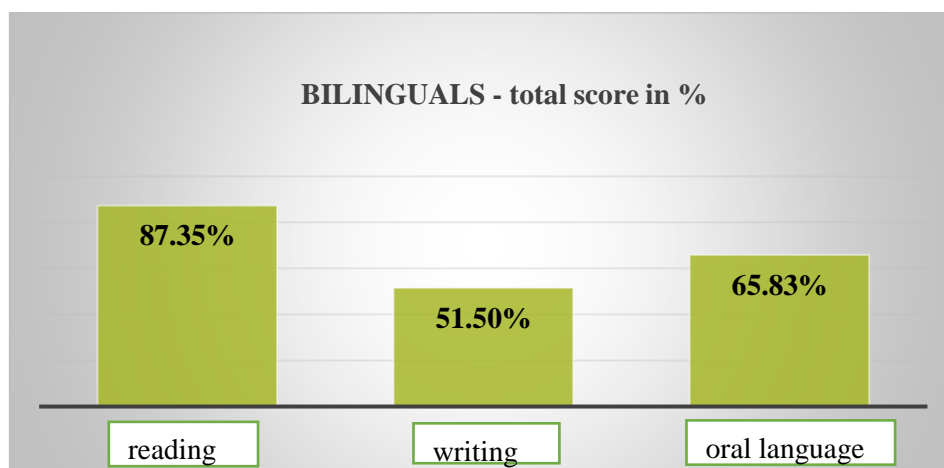
It can be said that the children from the minority groups did not acquire the Bulgarian language in a natural way, due to the fact that they live in closed groups, and some of the children of the Bulgarian emigrants do not acquire the Bulgarian language sufficiently in their family environment. This means that Bulgarian is the second language for both groups of children.

#### **4. A comparative within-group analysis between the spoken and written language of the experimental and the control group**

In this chapter, we will do a comparative within-group analysis between spoken and written language in bilinguals and a comparative within-group analysis of total scores between spoken and written language in monolinguals. Reliability of the oral and written language tests in the experimental and control groups will also be established through Cronbach's Alpha.

- Oral and written language test results of the experimental group

The results of the bilinguals can be seen in Diagram 14. They had the best result in reading tests (87.35%), followed by the speaking tasks (65.83%). The lowest success rate was in writing (51.50%).



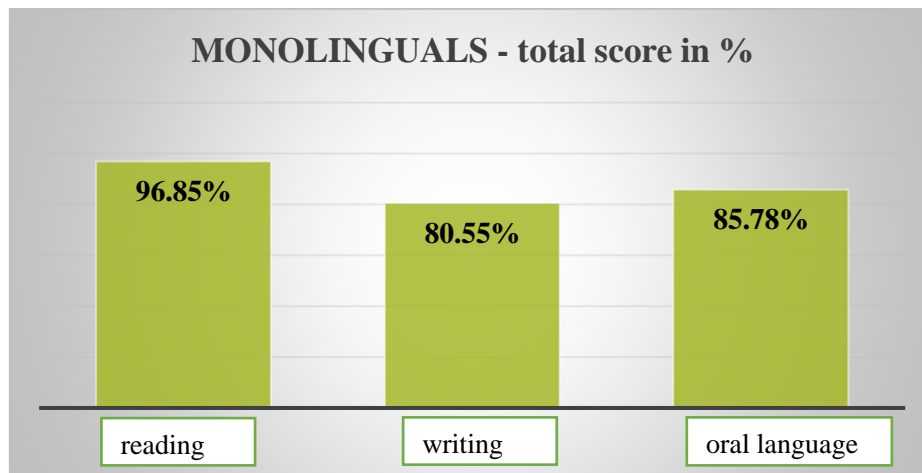
*Diagram 14. Intragroup analysis of oral and written language in bilinguals - general result in percentages*

To find out whether the oral and written language tests of the experimental group were reliable, an analysis was performed using the Cronbach's coefficient. If the values of the coefficient alpha  $\alpha$  are above 0.5, it means that the tests are reliable. From the Cronbach's Alpha values, it is found that tasks for the study of oral language (0.516) and written language (0.599) are reliable for bilingual students.

These data suggest that the tests are reliable and may help structure future research on written and spoken language in bilingual children.

- Oral and written language test results of the control group

Diagram 15 presents the results of the control group on the reading, writing and speaking tests. Again, it can be seen that monolingual students also had the best result in the reading test (96.85%), followed by the speaking tests (85.78%), and writing was the most difficult at 80.55%



*Diagram 15. Total results for oral and written language in monolinguals, expressed in percentages*

Reliability of the oral language tests in the control group was again examined using Cronbach's coefficient. If the values of the coefficient alpha  $\alpha$  are above 0.5, it means that the tests are reliable. From the values of Cronbach's Alpha, it is found that tasks for the study of oral language (0.460 ) and written language (0.228) for monolingual students are not reliable, most likely because the children successfully completed with all the tasks.

Based on the analysed results, it can be concluded that in both the experimental and the control group, writing is the most affected. In both groups, reading has a better success rate than oral language. This is because in oral language tasks there is independent verbal production, which is a complex cognitive function. Independent verbal production requires independent thinking, whereas in reading tasks there is a text to be decoded. In addition, in test 1 Reading and understanding sentences, there are also pictures, which facilitate administration of the test.

## 5. Comparative analysis and interrelationship between oral and written language achievement between the experimental and control groups

The correlation analysis presented in Tables 3 and 4 through the Pearson and Spearman coefficient proves hypothesis III and that there is a correlation between oral and written language in the experimental and control groups. It reveals a strong and statistically significant positive interrelationship between spoken and written language in both groups. Table 3 shows that both bilinguals and monolinguals have a correlation between spoken and written language, as the Pearson coefficient is below 0.5. This can also be seen from Table 4, where the rank coefficients are shown, by Spearman's correlation, again with values below 0.5.

*Table 3. Correlation analysis expressed by Pearson's correlation between spoken and written language for monolinguals and bilinguals*

		<b>Oral language – general score</b>	<b>Written language – general score</b>
<b>Monolingual</b>	Pearson Correlation	,451*	,451*
	Sig. (2-tailed)	.012	.012
<b>Bilingual</b>	Pearson Correlation	,441**	,441**
	Sig. (2-tailed)	.002	.002

*Table 4. Rank correlation coefficients for oral and written language in bilinguals and monolinguals.*

		<b>Oral language – general score</b>	<b>Written language – general score</b>
<b>Monolingual</b>	Spearman's Correlation Coefficient	,434*	,434*
	Sig. (2-tailed)	.017	.017
<b>Bilingual</b>	Spearman's Correlation Coefficient	,377**	,377**
	Sig. (2-tailed)	.008	.008

These results would be useful for future research of preparation of an assessment of the language and writing abilities of bilingual children.

## 6. Description and systematization of the errors in writing

Based on the conducted test 3 Independent writing of sentences based on pictures, and test 4 Dictation, various types of errors were found in the written production of the bilingual students, which are classified into two groups:

<b>Grapheme and word errors:</b>	<b>Sentence errors:</b>
<ul style="list-style-type: none"> <li>• <b>Elisions – missing letters at the beginning of the word in the middle of the word (mostly vowels) or dropping letters due to clustered consonants;</b></li> <li>• <b>Prostheses and epentheses – adding letters;</b></li> <li>• <b>Paragraphs - letter substitutions of visual, articulatory or phonetic principle;</b></li> <li>• <b>Reduction of syllables - gaps in syllables;</b></li> <li>• <b>Tearing up words and dropping parts of them - mostly prefixes;</b></li> <li>• <b>Word merge;</b></li> <li>• <b>Deformations of words;</b></li> <li>• <b>Grammatical substitutions of words - the word is replaced with its grammatically incorrect word form;</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Omissions of words;</b></li> <li>• <b>Rupture of phrases;</b></li> <li>• <b>Merging conjunctions, prepositions, particles and possessive pronouns with subsequent or preceding words;</b></li> <li>• <b>Spelling inaccuracies - errors in the spelling rules in the Bulgarian language, assimilation; incorrect use of the preposition;</b></li> <li>• <b>Merging/separation of the sentences;</b></li> <li>• <b>Inadequate punctuation – missing punctuation marks, missing capital letters or using them in an inappropriate place;</b></li> </ul> <p><b>In writing, some of the participants also reported other distinctive errors such as:</b></p> <ul style="list-style-type: none"> <li>• <b>illegible handwriting with dysgraphic symptoms;</b></li> <li>• <b>slow writing pace in some bilinguals, as well as more repetitions during dictation;</b></li> <li>• <b>writing Bulgarian words with Latin letters;</b></li> </ul>

In the written production of the monolingual group, errors were also encountered such as: merging conjunctions, prepositions, particles and possessive pronouns with subsequent or preceding words; spelling inaccuracies - mistakes related to not knowing the spelling rules in

the Bulgarian language, such as reduction, assimilation; incorrect use of the prepositions; inadequate punctuation – missing punctuation and capital letters.

Tsenova (2012, b) describes errors as omission of words as serious ones, because the meaning of the sentence is changed. Grammatical substitutions of words also change the meaning of the sentence and they are a sign poor grammar skills. Errors such as merging, splitting words, or contaminations again change the meaning of the sentence. She says that errors of this type indicate a low metalinguistic sense of the structure of written and possibly spoken language.

The typology of errors made by bilingual students enables teachers and speech therapists to select appropriate didactic and therapeutic methods to overcome them.

## **7. Discussion**

The results we obtained from the oral language tests show that bilingual children have the most difficulty with the verbal (semantic) fluency test, which involves listing animals for 1 minute. Bialystok (2009) also conducted a study of bilingual children involving a task to list as many animals as possible within one minute. The researcher concluded that bilinguals scored lower words than their monolingual peers. There are other authors who have investigated verbal fluency in monolinguals and bilinguals and have shown that bilingual children give fewer responses and list words more slowly than their monolingual peers (Sandova et al, 2010 ). Our results also show that bilinguals have lower results than monolinguals on this test. The spoken Bulgarian language among bilinguals is insufficiently developed, especially regarding to syntax and vocabulary, rather than their monolingual peers.

On the reading and writing tests, bilinguals again scored lower than monolinguals. In the Western literature, Melby-Lerveg & Lerveg (by J. van den Bosch, 2020), Kovelman et al. (by Riva et al., 2021) wrote that bilingual students performed worse than their monolingual peers in reading comprehension. Our results also confirm these claims that bilinguals have more difficulty with reading and understanding sentences and text than monolinguals. In a study of 6-year-old bilinguals, Demon, Louvet, and Nocus (by Bogdanova, 2014:167) found that bilinguals performed lower in a test on grammar level, while in a test on reading performance, bilinguals have higher scores. The results of our study also show that bilinguals have much more difficulty in writing, especially in the task of inventing and writing correctly grammatical sentences on a picture, than in the reading task.

Of the bilingual group, which includes students of Romani origin and students living abroad, the group of bilinguals of Romani does the worst results in writing. Similar results were reached by Tsenova, who conducted a study in 2012 in Bulgaria, including 38 children with bilingualism. She compared bilinguals with monolingual children and dyslexic children in second, third and fourth grade and found that writing disorders were three times more common among bilingual students. The author comes to the conclusion that in most bilingual children who are of Romani origin, bilingualism negatively interferes with linguistic ability, which makes the development of metalinguistic ability difficult. The results of the research lead to the following correlation - the worse the language abilities of the children, the more the semantic and grammatical substitutions of words when writing under dictation. The data of the study of the three groups (monolinguals, bilinguals and children with dyslexia) show that children with bilingualism fluence the written language with difficulty. Their writing skills are not very far from those of dyslexics, as the errors are similar as of dyslexics and this should be defined as a disorder. In 2019, Julia Festman and John Schwieter conducted a study covering 3rd grade monolinguals and bilinguals attending schools in Germany. The authors examined the academic achievement of the two groups in reading comprehension, reading fluency, and spelling to research whether there were differences between the two groups. They found that there were no significant differences between monolingual and bilingual children in reading fluency and reading comprehension. In writing and spelling, monolinguals perform better than bilinguals.

Our study reaches results similar to other studies conducted with bilingual children. It is apparent that bilinguals have much more difficulty in writing than in reading, and the errors in dictation are at the syntax, lexeme, and grapheme level. Despite these data, it would be good to conduct more similar studies in the future, related to establishing the difficulties of bilingual children, so that they can be successfully supported by teachers, parents and speech therapists.



## RESEARCH FINDINGS

Based on the researched scientific literature and the conducted research, the following conclusions and recommendations can be drawn:

### Conclusions:

1. Statistically significant differences are found between the experimental and control groups in oral and written language.
2. The oral Bulgarian language among bilingual students suffers compared to their peers from the general group.
3. The Bulgarian language of bilingual students in its written form is more affected than that of their monolingual peers.
4. The written language in the experimental (bilinguals) group is more affected compared to the spoken language.
5. Reading and comprehension of sentences and short text had higher results in both groups than the results in writing.
6. Writing sentences based on pictures is the most difficult test and has the worst results in both groups, especially in the experimental (bilinguals) group.
7. The errors of bilingual children in their written production are at the syntax level (missing a capital letter, omitting words in dictations and missing punctuation); at the lexeme level (merging words, splitting words, dropping letters and syllables) and at the grapheme level, including spelling errors.
8. There is a correlation between the rates in the oral language and in the written language for monolingual and bilingual students.
9. Bilingualism has an impact on the fluency of the written language and especially on writing.
10. Regardless of the appropriate language environment and attending a Bulgarian Sunday school, the mother tongue (Bulgarian) of bilingual children living abroad is not sufficiently developed.
11. Regardless of regular school attendance by bilingual children of Romani origin, the official language (Bulgarian) suffers and they need additional support.
12. Further studies and research on bilingual students could take into account the attached written and spoken language test tests, as these tests are reliable and informative.

### **Recommendations:**

1. Before entering 1st grade, it would be good for teachers to research and gather sufficient information about the family environment of each bilingual child.
2. It is necessary to assess the level of the linguistic competence for each student, both in the mother tongue and in the official language, in order to properly apply an individual and differentiated approach to his education.
3. It is possible to form and organize various additional and language clubs in schools to support language acquisition.
4. It would be good for parents to speak to their children in the language they know best (native language), and the official language of the country is practiced in kindergarten, school and/or between peers.
5. It is necessary for parents to provide a rich language environment related to reading books, conversations or various additional initiatives that are in the mother tongue.
6. Children can only acquire language through direct interaction and communication with adults, that is why learning a second language through electronic devices or speaking a foreign language by parents if they are not native speakers is not recommended.
7. The acquisition of a second language is best achieved when the children in family of mixed marriage, because then the bilingualism is real (coordinative) and both language systems are learned equally and well enough.

## CONCLUSION

There are still no definite statements how bilingualism influences child's functioning – positively or negatively. Bilingualism has been found to have a positive impact on children's cognitive development.

A positive influence was observed on inhibitory control, creative thinking, problem solving, selective attention, phonological awareness and metalinguistic awareness, but the vocabulary of these children was shown to be poorer because it was distributed between the two languages. There is no negative impact on language development (especially in coordinative bilingualism). There is still no definite conclusion how bilingualism influences fluency of the written language.

Our study tries to answer this question. The results show that bilinguals lag behind their monolingual peers in oral and written language, but written language is significantly more affected. The most difficult for them is writing sentences and dictation. Reading comprehension is at a good level, as is the general level of development of oral language, but the children have great difficulty in the verbal (semantic) fluency task, the synonyms task and the use of prepositions. These tasks are directly related to the richness of the vocabulary in a language, which indicates the need to support and enrich the language in this regard. It is also seen that there is a correlation between the level of achievement in oral and written language in both groups.

The written language results show that bilingualism has an impact on writing and reading. The errors in the written production of the bilingual children indicates a semantic deficit and a poor metalinguistic knowledge. It is necessary to understand for which of all the languages that the child uses, metalinguistic knowledge is not sufficiently developed. Our results indicate that in Bulgarian language, bilingual children do not have a sufficiently well-developed metalinguistic knowledge. These data show that the level of metalinguistic awareness needs to be taken into account in the literacy of bilingual children. If it is developed well enough, children should fluence written language more easily.

Parents are the ones who should stimulate children's speech and language development, and teachers are the ones to support this process at school. It is necessary to diagnose the speech development of bilingual children even before they enter 1st grade.

To determine whether a child has a language disorder or dyslexia, he should be tested in both the mother tongue and the official language of the country, preferably with the same tests for both languages. This is difficult to achieve because in Bulgaria there are still no

standardized diagnostic tools to examine language development in its oral form or writing in bilingual children. But this is a problem faced not only by Bulgarian speech therapists, but also by those in other countries.

We are sure that bilinguals do not have a complete language disorder, but only in certain aspects and especially in the written language, but it cannot be concluded that they have a language disorder or dyslexia. This is what the results of our study show, and in order to confirm it, more similar studies need to be conducted. In order to be definitive, it would be good if other researches to be conducted with much more participants, and before that, it is necessary to collect enough anamnestic data for each child, as well as to do the research in both languages. However, the difficulties and errors we found in the bilingual group can be taken into account by teachers in during 1st grade, as well as in therapy by speech therapists.

In conclusion, we will say that there are many questions surrounding the phenomenon of "bilingualism" and many factors that should be taken into account when studying bilingual children. In this regard, there is a more research need to be done on written language in bilingual children. The topic of the influence of bilingualism is relevant not only among linguists, teachers and parents, but also among speech therapists. In Western literature, there are a large number of scientific articles that examine the importance and influence of bilingualism from a speech therapy point of view, but there are still few such studies and articles in Bulgaria. This is why it is very important to publicize and carry out future research in Bulgarian speech therapy regarding bilingualism, as well as to create appropriate diagnostic tools for examining the level of language in oral and written aspects in bilingual students.

## **CONTRIBUTIONS**

The scientific contributions of the dissertation research fall into two categories:

### **Contributions to theory:**

1. Bulgarian and foreign sources related to the influence of bilingualism on oral and written language were studied, and the difficulties of bilingual students in oral and written language were identified.

2. The correlation between oral and written language achievements in both groups has been proven.

3. The most common errors in the written production of monolingual and bilingual 2nd and 3rd grade students are defined and typologized, which enables teachers and speech therapists to select appropriate didactic and therapeutic methods to overcome them.

4. A methodology is presented, including tests and results that are statistically significant and reliable regarding the study of oral and written language among bilingual students.

5. Results were obtained, which are particularly important and significant for Bulgarian researchers, since the language studied in all bilingual children is Bulgarian.

6. In the future, the research tool used can be standardized and implemented in the practice of speech therapists who work with bilingual students, which could support them in making a direct impact on the most affected areas of oral and written language of this group children.

### **Contributions to practice:**

1. Guidelines have been revealed that are of great importance for the work of speech therapists and teachers.

2. Guidelines for parents of bilingual children are provided.

3. There is a need for the definition of appropriate diagnostic criteria and batteries regarding the study of oral and written language in bilingual students.

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## PUBLICATIONS ON THE DISSERTATION TOPIC

1. Пиева-Златарева, Г. (2023). Osobnosti v pismenia balgarski ezik pri bilingvalni uchenitsi. Sbornik s dokladi: „Logopediyata s pogled kam badeshteto“, s. 247-257, Universitetsko izdatelstvo „Sv. Kliment Ohridski“, ISBN 978-954-07-5839-8. [Илиева-Златарева, Г. (2023). Особности в писмения български език при билингвални ученици. Сборник с доклади: „Логопедията с поглед към бъдещето“, с. 247-257, Университетско издателство „Св. Климент Охридски“, ISBN 978-954-07-5839-8]
2. Пиева, Г. (2022). Alternativni podhodi v prepodavaneto na bilingvalni uchenitsi, Sbornik ot tretto-nauchna prakticheska konferentsia „Образование и изкуства: Традиции и перспективи“, s 40-48, Sofia, Fakultet po nauki za obrazovaniето i izkustvata, SU „Sv. Kliment Ohridski“, ISSN 2738-8999. [Илиева, Г. (2022). Алтернативни подходи в преподаването на билингвални ученици, Сборник от трето-научна практическа конференция „Образование и изкуства: Традиции и перспективи“, с 40-48, София, Факултет по науки за образованието и изкуствата, СУ „Св. Климент Охридски“, ISSN 2738-8999]
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