Bilingualism and Intellectual Disabilities

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Abstract---
Introduction: This scientific study deals with the problem of bilingualism in children with intellectual disabilities.
Method: Data collection for children that are part of a national minority was obtained from school documentation and interviews with the children's parents and educators. In area of neurodevelopmental testing, we used clinical, development scales of writing and reading (neuropsychological battery Luria-Nebraska for children). The sample included 124 children whit intellectual disabilities who are attending primary schools in Belgrade, Serbia.
Results: The results shown the there is a significant relationship between balanced bilingualism and reading so as the relationship between dominant bilingualism and writing at the tested sample.
Conclusions: The study points out the significance of speech rehabilitation upon the educational treatment of tested children.

Keywords--- Intellectual Disabilities, Bilingualism, Treatment.

I. Introduction

This study is a segment of the wider research project in which the above-mentioned problem of bilingualism of children with mild intellectual disabilities is explained from the aspect of cognitive efficiency and educational achievement in the learning of the mother tongue. This takes place with this population of children, in the conditions of the inclusive school treatment. Bilingualism, according to the statements of most authors from this scientific field presents the case of alternative use of two or more languages by one person (Kangas, 1991; Maćešić - Petrović, 2002, Maćešić-Petrović, Bašić, Zdravković, Gajić, & Arsić, 2021).

Bilingualism at children age can appear in one out of two types of bilinguisam: dominant or balanced bilingualism. Dominant bilingualism (the so-called unbalanced bilinguals) points out the great difference in knowledge of two or more languages. It refers to better knowledge of only one language, most often the mother-tongue. Opposite to that, balanced bilingualism (the so-called balanced bilinguals) puts the light on small differences in the knowledge of a language and presents equally good knowledge or bad knowledge of two or more languages. (Shahrzad, 2019; Soh & Hazita, 2021).

Most of the authors in this field agree with the opinion that bilingualism ammo children can disturb development of the speaking-linguistic structures more often than the general cognitive development and cognitive efficiency, which was confirmed by the results research in the population of persons with intellectual disabilities (Castro & Artiles, 2021; Golden & Shawna, 2000).

Therefore, the goal of this research is answering the question how does the interference of bilingualism of children with mild intellectual disabilities affect the efficiency in the learning of mother-tongue regarded according to the school achievement in learning of reading and writing? The practical value of this work is in the possibility of

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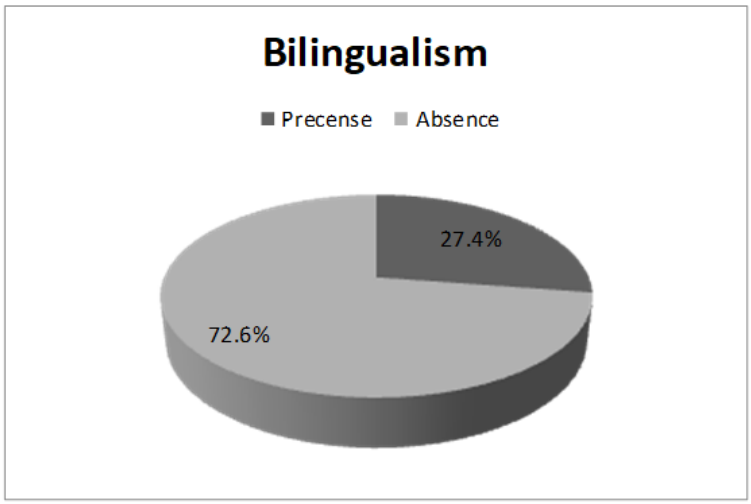
the adjustment of the program of mother-tongue learning to the current trends in this field in accordance with the developmental needs of children with special needs.

II. Materials and Methods

The sample consisted of 124 children with mild intellectual disabilities of both gender with no neurological or psychiatric signs, which are present with in the inclusive schooling. Intelligence coefficient of the examinees in the sample ranges from 51 to 70 measured by the WISC scale of intellectual abilities. The sample included pupils from the 1nd and 2nd, grade of elementary schools in Belgrade, from the age of 6 years to age of 8 years.

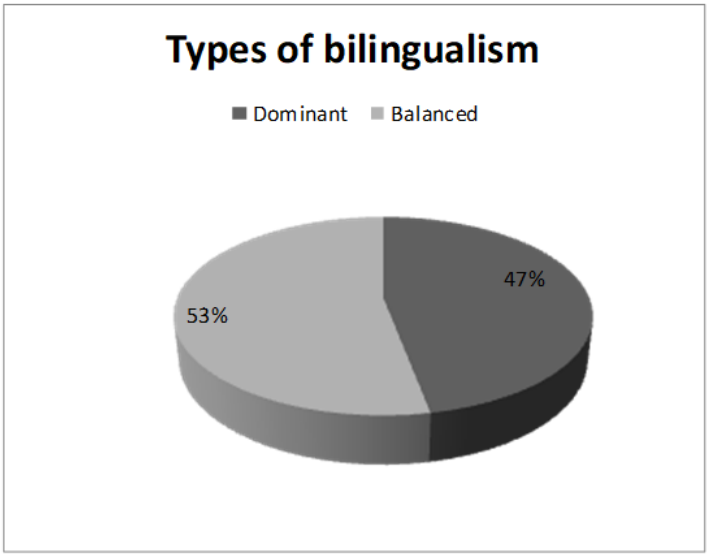
The method of research included neuropsychological testing with clinical, development scales of writing and reading of the battery Luria-Nebrasca for Children (Golden & Shawna, 2000). Statistical method used in the research referred to percentage and graphical representation of the collected data as well as to the application of Hi square test and Pirsons correlation coefficient.

III. Results



Graph 1: Bilingualism Percentage

Bilingualism problems are present with 27.4% examinees of the sample, while the rest 72.6% examinees are educated in their mother-tongue language and have no bilingualism difficulties.



Graph 2: Type of Bilingualism

Among the total bilingual examinees in sample, 53% of children learned equally good or equally bad both languages (balanced bilingualism). Better knowledge of one language (dominant bilingualism) is present in 47% of the cases.

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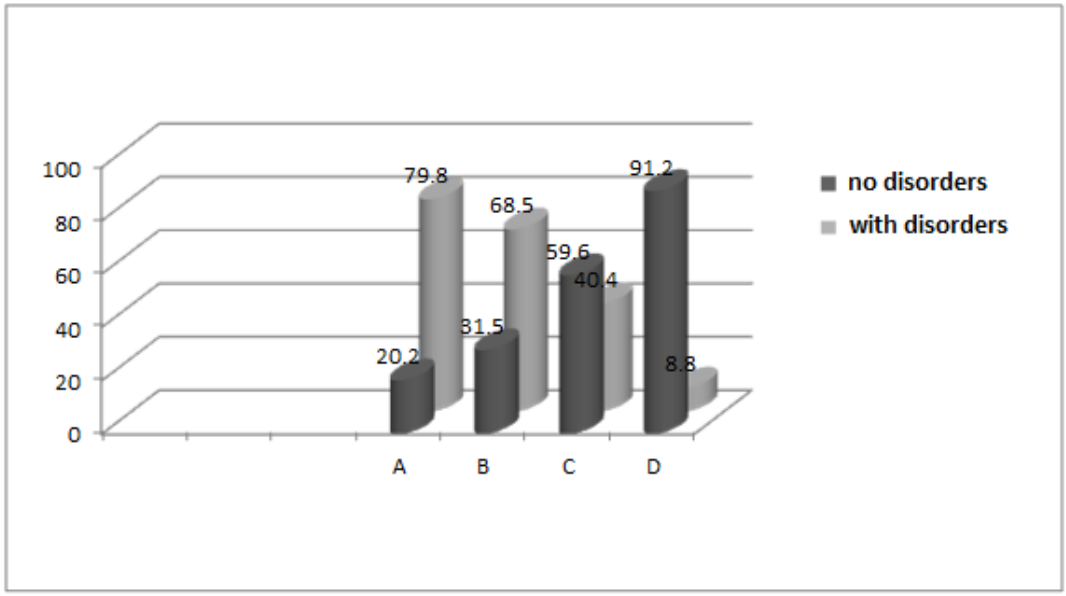

A - Attention

B - Cognition

C - Behavior

D - School Achievement

Graph 3: Testing the Sample Point Out the Conclusion that Developmental Disabillities are Presented in More than Halph of Tested Sample. No Developmental Disrders are Evidented in Area of Behaviour and Global School Achievement

Table 1: Statistical Analysis

	Dominant bilingualism	**Balansed bilingualism**
Reading		χ^2= 5,226 df=1 p <0,02 Φ=0. 538
Writing	χ^2= 6,239 df=1 p <0,02 Φ=0. 624	

The results of statistical anallysis point out the high statistical significance between reading and writing abilities and bilingual problems. There is a high statistical relationship between dominant bilingualism and writing abillity same as between balanced bilingualism and reading abillity.

IV. Discussion

The results of our researches in this field show that between bilingual children and the–children without bilingualism are not presented considerable statistically differences in applied tests in attention, global cognition, behavior and general preschool or school achievement. Our earlier researches confirm similar results (Maćešić-Petrović, 2002; Maćešić-Petrović, et al., 2021).

However, statistically considerable differences appeared after the distribution of children into sub-groups according to the level of bilingualism (that was the subject of this research) same as our other similar studies (Maćešić-Petrović, et al., 2021).

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The level of bilingualism shows how big the differences in the knowledge of a language are. Statistically significant differences, defined by the level of bilingualism, were ascertained between bilingual children and the children whose mother-tongue, in achievement in the tests in writing and reading.

Namely, big differences in knowledge of a language that show a low level of bilingualism, which is a mark of dominant bilingualism, obstruct development and learning of writing. Opposite to that, small differences in the knowledge of a language that show a high level of bilingualism, which is a mark of balanced bilingualism, obstruct the development and learning of reading (Hehu, Jia & Guosheng, 2021).

Researches in this field show similar data. Those researches underline the fact that in the case of insufficient knowledge of both languages, (balanced bilingualism) speaking-language structures are disabled more than the general cognitive development. By this, reduced intellectual efficiency of bilingual children on the level of speaking language structures is shown (Rondal, 2000; Ruiz, Vargas & Beltran, 2002).

Researchers in this field find the reason for this occurrence in the fact that a bilingual child must learn two expressions in the same way. Of all of the other factors, the most important one is the difficult process of "digging over", (shift) which means, the transition from one language system to another (Kangas, 1991; Maćešić-Petrović, et al., 2021). This pointed the difficult transition from one language system to another as the obstructive factor of the system of grapheme-phonetic conversion on the mental level which is the basis for the activity of reading and writing significantly determined by the level of bilingualism (Rondal, 2000; Rouiz, Vargas & Beltran, 2002).

Also, we can conclude from shown results, the bilingual disabilities in children with intellectual disabilities, is the key for understanding the before mentioned problems of shifting, or "digging over". The transition from one language system to another, which is the basis of shifting, is significantly obstructed in the relations of dominant bilingualism and writing. Dominant bilingualism shows big differences in the knowledge of a language and a higher level of language interference. A higher level of language interference shows significantly more difficult shifting, the shifting of the system of grapho-phonemic conversion included in the act of writing. (Kangas, 1991; Hehu, Jia & Guosheng, 2021.).

Opposite to this, in the relations between balanced bilingualism and reading we have a lower level of language interference because the differences in the knowledge of a language are smaller. A lower level of language interference obstructs the mechanism of shifting in a lesser degree or maybe the mechanism of shifting is making confusion in gnosis processes (recognition) (the confusion of ability of recognition) which is the base of the present reading problems in our sample (Maćešić-Petrović, 2002, Maćešić-Petrović, et al., 2021; Hehu & Guosheng, 2021).

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