

Research article

Knowledge, intellectual disabilities, and bilingualism

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Abstract

Aims: The scientific study deals with the problem of bilingualism in the population of the children with mild intellectual disabilities on educational treatment. The study is based upon Lajos Genc and Tove Skutnab Kangas theory of bilingualism. We try to assess the differences between reading and writing in different categories of bilingual children with intellectual disabilities, such general school achievement in monolingual and bilingual children.

Methodology: The research included the 124 children with mild intellectual disabilities, who are attending primary schools in Belgrade, Serbia. The research was done by trained experts in special education and psychologists who used clinical, development scales of writing and reading of the neuropsychological battery Luria-Nebraska for children.

Results: The results of the research point up to the conclusion about the existence of significant relationship between balanced bilingualism and reading and also the relationship between dominant bilingualism and writing in the population of children with intellectual disabilities.

Conclusions: The study points up to the significance of application of rehabilitation procedures upon the standard school treatment of this population of children.

Key words: Bilingualism, Educational treatment, Intellectual disabilities.

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1. 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 (Genc, 1981; Tove Skutnab Kangas, 1991).

Bilingualism, as defined by most authors in this field, is the alternative use of two or more languages by one

person (Ruiz et al., 2002; Lindberg, 2005; Cummins, 2000, 2001, 2011; Garcia et al., 2006).

During the development of speech and language in children, bilingualism can manifest in two ways as dominant or balanced bilingualism. Dominant bilingualism is when there is a great difference in the knowledge of two or more languages and it falls into the category of so-called unbalanced bilingualism. At the manifest level of speech-language activity, it represents the appearance of better knowledge and use of one language, most often the mother tongue. In contrast, balanced bilingualism indicates small differences in knowledge and use of a language and

represents equally good or poor mastery of two or more languages.

Conceptual framework for understanding the problem of bilingualism among children with intellectual disabilities focused on the theoretical views of Lajos Genc and Tove Skutnab Kangas as the basis of the empirical framework for our research project. These authors believe that a semi-lingual subgroup within balanced bilingualism is a problem from the viewpoint of special education and rehabilitation, considering that the semi-lingual subgroup represents a group of bilingual children who mastered their mother tongue and non-mother tongue equally poorly, or relatively unsuccessfully (Tager-Flusberg, 2003). According to our clinical experience, the examined population of children belonged to this group of bilingual population; this might be the subject of our future research in this area.

In the theoretical and practical conception of bilingualism, we first must formulate the position on language as a starting point for defining the concepts of both bilingualism and monolinguals. Tove Skutnab Kangas gives the most comprehensive considerations on these concepts and thus points to the views on language as a link and language as a means. The conceptual framework of these research problems should be considered theoretically and practically through a possible framework for defining the concept of mother tongue.

The definition of the mother tongue is usually based on well-known, popular criteria related to the following:

- the language we think in;
- the language we dream in;
- and the language in which we calculate.

These criteria are relatively weak because by living longer in an environment, a person can be able to use language relatively well in these functions. Therefore, we highlight the importance of more objective criteria, such as criteria of origin, then competences or language skills, furthermore the criteria of function or application the language, and the criteria of attitudes.

According to the criteria of origin native language is thought to be the language spoken by the mother, or the person who first establish a regular and ongoing linguistic communication connection with the child. According to this view, the mother tongue is "the one that the child learns first" (Kangas, p. 23).

According to the criteria of competence language, interpreted by Kangas, can be defined as "a language that a person knows best" (Kangas, p. 23). Competence refers to the mastery of language, e.g., that the level of acquisition.

The criterion of function or application is contained in predominantly socio-linguistically oriented definitions of function. Thus, with this aspect of the native language is defined as "the language most used" (Kangas, p. 24, 1991).

From the aspect of attitudes native language can be defined as "a language with which a person identifies" (Kangas, p. 24, 1991). The attitude about language as a means is determined by the fact that "language itself is the world that mediates between the individual and its external circumstances" (Kangas, p. 10, 1991). In this sense, illustrative is the definition given by Ole Peter Opsend who says: "Language has a function that goes far beyond the transfer of verbal messages. Language proficiency is a prerequisite for the cognitive and conceptual development, because of the constitution of our reality, what in its turn constitutes the starting point for our daily practice" (Kangas, p. 11, 1991). Therefore, the understanding of this complex concept, it is necessary to start from the definition of the concept of mother tongue.

Bilingualism at children can appear in the type of dominant or balanced bilingualism. Dominant bilingualism (the so-called unbalanced bilinguals) points up to the great differences in knowledge of two or more languages. It presents the case of better knowledge of only one language, most often the mother-tongue. Opposite to this, 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 (Tove Skutnab Kangas, 1991; Macesic-Petrovic, 2002).

Conceptual frame of examination of these problems in the population of children with mild intellectual disabilities is focused on theoretical views of Lajos Genc and Tove Skutnab Kangas, as the basis of the empirical frame comprised by our research project. Terminological and notional differences of the stated authors include the concept of balanced bilingualism, which is, according to the above-mentioned point of view, interpreted as good knowledge of two or more language (Tove Skutnab Kangas, 1991; Rondal, 2000). Therefore, we can define the sub-group of semilinguals according to the above-mentioned opinions, by a notion of bilingual population which had learned equally bad mother-language and a foreign language as second language, and in our opinion the population examined by this research belongs to that same group of semilinguals (Rondal, 2000; Macesic-Petrovic, 2002).

Most of the authors in this field agree with the opinion that bilingualism with children disturbs development of the speaking-linguistic structures more often than the general cognitive development and cognitive efficiency, which was confirmed by the results of our research in the population of persons with intellectual disabilities (Genc, 1981; Golden, 1987; Macesic-Petrovic, 2002). But, specific cognitive abilities can be affected by the presence of bilingual disabilities rather than general cognitive functioning. This have influence on the school achievement bilingual children, same as the level of success teachers in teaching and education these children.

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 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. Practical goal is also the possibility to help the teachers and special educators in everyday work in teaching.

2. Material and methods

The sample consisted of 124 examinees with mild intellectual disabilities, with no neurological or psychiatric signs which can be present within the inclusive education. 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 2nd, 3rd, 4th and 5th grade of elementary schools in Belgrade, both gender distribution, from the age of 8 years to 13 years and six months.

The method of research included surveys of special educators and parents, the analysis of school documentation and examination of developmental and educational achievement in the field of reading and writing of the children with and without bilingual disturbances. The research was done by trained experts in special education and psychologists who used clinical, development scales of writing and reading of the battery Luria-Nebraska for Children (Golden, 1987). Other data relevant for this research were collected by the cooperation of psychologists, special educators, parents, and other researchers involved in this project. 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 Φ correlation coefficient.

3. Results

Bilingualism problems are present with 27.4% examinees of the sample (12.9% of one type and 14.5% of other type of bilingualism), while the rest 72.6% examinees are educated in their mother-tongue and have no bilingualism difficulties.

Among the examinees in the sample, 14.5% of children learned equally good or equally bad both languages (balanced bilingualism). Better knowledge of one language (dominant bilingualism) is present in 12.9% of the cases (Fig. 1).

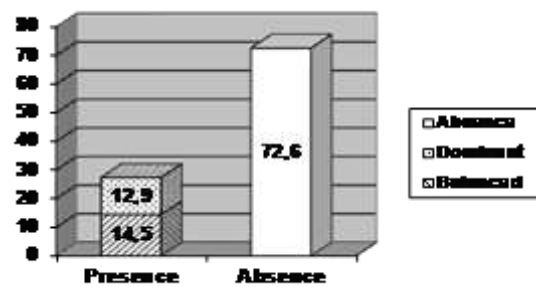


Fig. 1. The results of the assessment of the presence and degree of bilingualism

Distribution of results of reading abilities of the sample point out the high frequency of reading problems in bilingual children, both balanced or dominant types (Fig. 2 and Fig. 3).

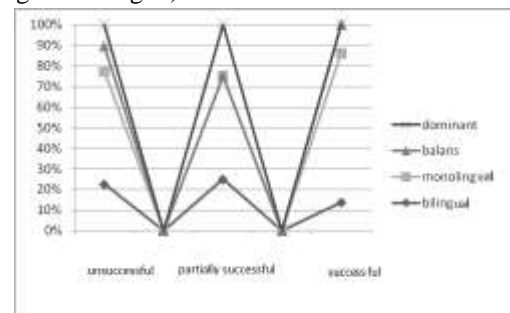


Fig. 2. Results of assessment of reading abilities in monolingual and bilingual children

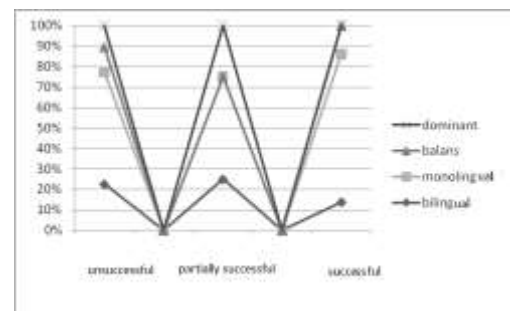


Fig. 3. Results of assesment of writing abilities in monolingual and bilingual children

Testing the writing abilities of sample, we conclude about the high presence of writing problems in children with bilingualism in opposite with children without bilingual problems (Fig. 4).

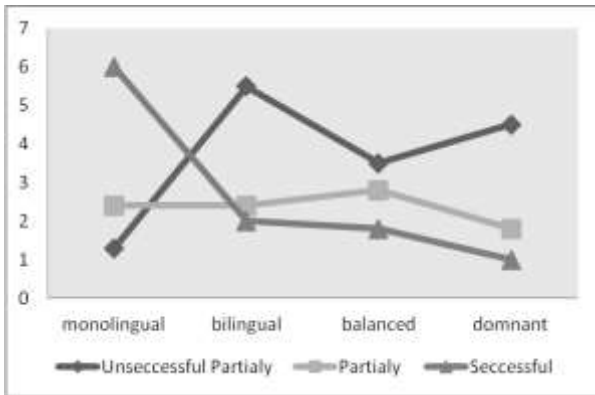


Fig. 4. Results of assesment of general school achiveme in monolingual and bilingual sample

The results are presented in 7 point scale of marks, which means the quality of achievement of tested children, rather than in numerous, from 1-5. In our scooles we want the mark to be stimulate for popuils, not frustrate and we describe their achievement, rather then rating. We displayed achievement from unsuccessfully partially (marks 1 and 2), partially succeeded (marks 2, 3) and successful (mark 4 and 5). In this 7 rating scale we present general school achiveme of tested children and distributed them in three descriptive categories because of simplifcity of too complicated seven point rating scale, displayed by the figure. We can see that most of monolingual children are successful, with marks described between 6 and 7. Oposite to this data, are partially succeeded, which means that they achieve marks 3 and 4 (good and partially good) whereas balanced and dominant bilingual pupils achiving numeral scores from 2 to 1, ie. unsuccessful, so called partially unsuccessful (Table 1).

Table 1. Statistical analysis of obtained data

	Bilingualism	Dominant bilingualism	Balansed bilingualism
Reading	$\chi^2=3,896$		$\chi^2= 5,226$
	df=1		df=1
	p <0,05		p <0,02
	$\Phi=0.338$		$\Phi=0. 538$
Writing	$\chi^2=3,896$	$\chi^2= 6,239$	
	df=1	df=1	
	p <0,05	p <0,02	
	$\Phi=0.338$	$\Phi=0. 624$	

The results of statistical analysis 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 ability same as between balanced bilingualism and reading ability.

The obtained result has shown that there is not statistically significance between general school achievement and presence of bilingualism. Clinical experience and work suggest opposite (Table 2).

Table 2. Statistical analysis of obtained data

	General school achievement
	$\chi^2=2,936$
Presence/absence of biligualism	df=1
	p \geq 0,05
	$\Phi=0.253$

4. Discussion

The results of our earlier researches in this field show that between bilingual children and the children whose mother tongue there was no considerable differences in results in applied tests (Macesic-Petrovic, 2002). However, we conclude that considerable differences may appear after the distribution of children into sub-groups according to the level of bilingualism.

In research the level of bilingualism shows how big the differences in the knowledge of a language are. Statistically significant differences, in this research , defined by the level of bilingualism, were ascertained between bilingual children and the children whose mother-tongue is Serbian, 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.

Researches in this field show similar data. Those researches underline, before all, the fact that in the case of insufficient knowledge of both languages, (balanced bilingualism) speaking-language structures are obstructed more than the general cognitive development. By this, reduced intellectual efficiency of

bilingual children on the level of speaking language structures is shown.

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”, or in other words, the transition from one language system to another (Genc, 1981). 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.

Also, we can conclude that, in the light of this approach to the bilingual obstructions of the children with intellectual disabilities, the key for understanding the before mentioned problems is included in the notion of shifting, or “digging over”. Namely, 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 (Genc, 1981; Skutnab Kangas, 1991).

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 gnosis confusion (the confusion of ability of recognition) which is the base of the present reading problems in our sample.

Bearing in mind that the methodical approach to teaching children with mild intellectual disabilities is based on the ability of verbal communication it is not without significance that the quality of development of verbal abilities in these children is crucial for their cognitive development and academic achievement. It should also be noted that in addition to a lower level of intellectual functioning verbal achievement and verbal development of these children is hindered by other factors such as belonging to other ethnic groups with

language that is different from the language in which classes are conducted (Lindberg, 2005).

This may interfere with mastering and understanding of classroom content. These children also face difficulties in communication and interaction within the family and school environment. The problem becomes two-way: the child-teacher, the child, peers, and vice versa. Both teachers and peers have difficulty communicating and interacting with a bilingual child.

This reflects to the problem of communication and understanding of the language in which classes are taught. It is difficult for the teacher to understand, communicate and adjust the work in a group intervention towards a child that is bilingual. The use of teaching methods, means and forms of work is hampered, and above all, communication between the child and the teacher as well as the child and his peers is hindered. This can result in negative socio-emotional implications and a whole range of stressful reactions of the child and the environment that ultimately result in conflicting interaction and communication between the child and the school and family environment. This conflicting interaction and communication between the child and the environment is the backbone of the development of emotional disorders and mental disorders, which are common in this population than in typical one.

That situation is quite a common in schools for children with intellectual disabilities, therefore this research is devoted to the problem of bilingualism in education, especially the education of reading and writing of children with mild intellectual disabilities, as one of the special problems of education and rehabilitation. These conclusions have a big influences in defining future researches in this scientific area. Results of this research didn't shown statistically significance between tested general school achievement and presence or absence of bilingualism. That is in accordance with the similar date of Lajos Genc (Genc, 1981).

Despite of these results we must pay attention to bilingual children in their educating because we can clinically and practically observe and identify many of these children who have problems in educating generally, not only in some school subjects, such as writing and writing separate. This conclusion have big implications in their everyday life and behavior. These

conclusions are also significant for defining future researches in this scientific area.

5. Conclusion

On the base of the obtained results we can conclude:

1. Various type of bilingual disabilities can cause different types of communicational and educational problems, such as writing and reading problems and possible mental and emotional disturbances in children with intellectual disabilities, which teachers have to face with it. So, teachers need special training and additional education for resolving these problems in classroom
2. Bilingual problems can cause many different interferences and disturbances in communication and interaction with peers and authorities in school and family settings which can be the base for forming the behavioral disorders such as emotional disturbances in children and adolescents in the multilingual environment. This makes the conflicts into the classroom climate and teaching processes.
3. The results point out the necessity for formulating the IEP and ITP - individual educational planes and individual treatment planes - for speech and language education, such as planes for speech and language treatment and therapy in schools.
4. For those, for whom it is necessary it must be implemented the various strategies for therapies and treatment of the cognitive disorganization, such as educational treatment same as treatment for behavioral, emotional and mental problems of persons with intellectual disabilities. It will be good to organize them in school settings which provide known environment for children and decrease their anxiety and fear of unknown places and persons who implement the treatment.

Conflict of Interest

The authors declare that they have no conflict of interest.

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