



THE INFLUENCE OF AGE, SEX, VISUAL ACUITY AND EDUCATIONAL MEDIA ON THE VERBAL ABILITY OF CHILDREN WITH IMPAIRED VISION

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Abstract

The aim of this study is to examine the effectiveness of oral and written expression of the pupil with visual impairment considering: visual acuity, age, gender, intellectual level, success in school, educational medium, previous involvement in rehabilitation and visual impairment. The examinee sample consisted of three groups of students: blind (N=51), low vision students (N=42) and students without visual impairment (N=123) attained from students' population grades 1-4 in primary schools in the area of Tuzla Canton and population of blind and low vision students from the boarding school grades 1-4 in the Centers for blind and low vision children and youth, as well as the population of blind and low vision students grades 1-4 that are integrated in regular schools in primary schools of Tuzla Canton. A diagnostic set for examination of capacities for speech, language, reading, and writing of children was used for examination of the vocabulary (Bjelica, Posokhova, 2001).

Analyzing the results of korelation analysis can be concluded that three examined groups vary statistically according to all variables. The disadvantages determined in the development of a vocabulary can be helpful when creating rehabilitation programs for improvement of these skills where student of impaired sight show the weakest results.

The analysis of the results in the sets of variables for the evaluation of the development of the vocabulary, the written expression and the anamnestic variables correlations have been calculated, where significant correlations have been obtained between visual impairment and the use of the appropriate educational medium.

Keywords: Pupils with Visual Impairments, Pupils with No Visual Impairment, Oral and Written Communication.

INTRODUCTION

The study of language development in children with impaired vision starts from the premise that the language development is based on cognitive abilities, cognitive and language dependence affects not only the occurrence of the first word, but also the expression of meaning in early language productions. It is believed that the later development, even some specific aspects of grammatical development, depends on the specific cognitive achievements (Cromer, 1991). Landau (1997) points out that blind children are able to learn the meaning of certain words (look, see) without direct sensory experience. Others authors suggest that blind children are able to analyze the position of words in the statements, formulating rules and learning the rules of grammar principles. Linguistic experience is considered to be very important for blind children and it is denied by the non-existence of visual input. The use of stereotypical language, imitation and repetition are considered useful for the language development of blind children (Perez-Pereira, 1994). Many scientists believe that language acquisition in the blind is not late, not aberrant, but that it follows a different path, using other resources for development compared to children without visual impairment (Jovanovic, 2005). McGregor et al. (2007) point out that language development and vocabulary development depend upon the well-developed lexical and semantic abilities. In the research of data about the connection between tactile perception

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and some language variables (phonological and semantic recognition, that is, the recognition of certain materials on the basis of phonological and semantic features) Vučinić (2005) examined the blind children at the age of 4-10 years. The results showed that children equally use both types of information processing and memory, with a weaker result recorded in phonological similar series in relation to the heterogeneous, while the difference was somewhat lower when compared to the success of tactile similar series in relation to heterogeneous. Various disorders of the oral speech are in hundreds of ways interwoven with the disorders of the written language (De Sosir, 1996). Written vocabulary is much broader than the vocabulary from the direct speech, mainly because many words come more easily when writing, and they require less automation than while speaking. This is especially evident at an early age. With age, the differences in the written and spoken language and in the language in general, become less evident. Many researchers point out that we need to work not only on enriching the child's written vocabulary but also the spoken one. By the age of seven, written vocabulary is usually richer by 50% than the spoken one and that with age; it gradually decreases (Vasić, 1977). Transcription requires a firm guiding hand, coordinated movements, good visual and spatial orientation, and clear distinction of phenomena and appropriate linguistic level (Pavičić, 2000). Zovko (1991) points out that the child in relation to the transcribing must have an ability of perceiving the letters, fine motor skills for writing, eye-hand coordination, motoric memory for samples of letters and words. Argyropoulos (2006) performed an analysis of grammatical and spelling errors with 16 blind students. Results have shown many specifics in the form of grammatical and spelling errors, and also the attitudes of the students towards spelling and the relation between the spelling and the reading strategies. Comparative studies conducted worldwide show that the standard ways of written communication among the blind people are being overcome, because there now exist different systems of professional education and training (Hare, 1999). As development of speech in some children is a spontaneous, natural process, so is the adoption of letters for them like a kind of a game. The children have to go through systemic exercises that contain all the elements of writing and reading. Every element of adopting each letter must be separately processed, and these elements are: voice recognition through analysis and speech synthesis, recognition of letters isolated and in the context, preparation of graphomotoric exercise and the writing of graphemes (Fargo, 1996). Žigić and his colleagues (2005) have examined the abilities of written communication on the sample of 32 participants with visual impairment. The research has shown that only 37% personally signed for themselves, Braille board is very little in the use in the written communication, only 18%, and that Braille machine uses 62% of the participants. The work on the literacy of pupils should be understood as providing the educational help needed for the complex and creative acts of literary expressing of our pupils. Smirnov starts from the point that for good literacy it is necessary to master the area of „spelling and punctuation“, then „development of pupils speech“, and then „the grammar“ (Pašić, 1998). Writing itself is one of the most complex human activities that integrate itself into virtually all functions of the brain. To say it more precisely, it is the most complex form of linguistic activity. It is more complex than reading, because it involves the coordination of eye-hand mind-language messaging (Vladislavljević, 1991). Literacy according to Anić (1991), knowledge of letters, skills in writing and reading, is a skill of creating texts, the skill of proper and meaningful writing. Bežen (2002) says: «For someone to make big grammatical, stylistic or spelling errors, we can with full right say that they are „semi-literate“ or „illiterate“. Literacy is acquired as a part of general education in schools but also as the result of long-term learning. Literacy is a set of skills and abilities that needs to be constantly developed, it supports the lifelong learning and it is one of the most appreciated human knowledge and a skill.



THE AIM OF THE RESEARCH

Examine the impact of vision, age, gender, educational media on the written and oral communication of children with impaired vision.

WORK METHODS

The sample of students

The sample consists of three groups of students: blind, low vision students and students without visual impairment obtained from the population of students from the first to fourth grade of primary schools in the area of Tuzla and the population of blind and low vision students in boarding accommodations who are also from the first to fourth grade at the Center for Blind and Low Vision Children and Youth, as well as the population of blind and low vision students from the first to fourth grades, who are integrated in regular schools in Tuzla Canton.

The sample of variables:

Anamnestic variables, active dictionary, passive vocabulary, written expression and dictation.

Way of conducting research and measuring instruments

In the activities of the forming the sample, we used the following instruments for the gathering of the information needed: Analysis of the documentation from the pedagogical-psychological institutions, medical records (visual acuity, age, gender, intellectual level, success in school, previous time in rehabilitation, the time of their disability, educational disability). For examining the development of active and passive vocabulary was used "Diagnostic packet for testing the ability of speech, language, reading and writing of children" (Bjelica and Posokhova, 2001) was used.

Data processing methods

The data obtained were statistically analyzed using the SPSS 10.00 computer software for Windows. During the statistical analysis a correlation analysis was performed.

The study was conducted with a level of significance of 5% (0.05).

RESULTS AND DISCUSSION

Poverty in the vocabulary of children with visual impairment is an additional factor of child's failure in school, and even failures in communication (Hrnjica et al., 2004). Blindness reduces the availability of data from the environment, adversely affects the development of communication between mother-child, due to the lack of the language of smile and eyes (Vucinic, 2005). Many scientists believe that language acquisition in the blind is not late, not aberrant, but that it follows a different path, using other resources for development compared to children without visual impairment (Jovanovic, 2005). Cutsforth (1932; by Vucinic, 2006) conducted tests on a sample of congenitally blind children (N = 26) and blind children who lost their sight later in life (N = 13) from age of 8 to 21. Respondents were given a task to name 40 different objects and to name some of their properties. The results showed that out of the total number of responses 54% were terms related to visual properties, but the congenitally blind children made 48.2% of such responses, and blind children who lost their sight later in life gave 65% response. Harley (1963; by Vucinic, 2005) conducted the examination of the use of verbosity in 40 children aged 7-14 years who attended two special schools. The children were asked to define certain words taken from dictionaries for elementary school, then to identify objects that are correctly defined just by touching. He concluded that there is a strong negative correlation between IQ and verbosity, as well as chronological age, experience and verbalism. Dimcovic (1992) conducted a survey of general verbal ability on a sample of blind children and children without visual impairment from age of 6-12 years, and she concluded that blind children have a poor vocabulary. Anderson and Olson (1981; by Vucinic, 2005) conducted a study of defining and describing the concrete and abstract objects in blind and children without visual impairment, concrete objects were considered to be items that can be examined by tactile perception, and abstract one those that could be imagined. Blind children specified more properties in describing the concrete than in describing the abstract concepts.

By observing Table 1, several groups of interrelated variables are noted. We see that correlation coefficients among variables are fairly high with a higher number of positive and fewer negative values. The highest positive correlation in the correlation matrix of dependent and independent variables was achieved by educational medium variables and visual eye variables with the coefficient of correlation (0.93). The correlation points to the fact that in blind and partially impaired students the



degree of visual impairment is associated with the use of appropriate educational media. Negative correlations were obtained by the passive vocabulary variables and the independent visual value variable whose coefficient of correlation is -0.83. This means that students have a greater degree of visual impairment to have a poorer vocabulary. Also negative correlation was achieved by variable educational medium and passive dictionary correlation coefficient -0.74. This connection could be interpreted to ensure that blind and poor pupils in elementary school do not use the appropriate educational medium to have a poorer dictionary. Negative correlation was obtained by the variables of the written expression and the visual acuity variable where the coefficient of correlation is -0.86. Relationships point to the fact that blind and weak pupils have a higher degree of visual impairment will also achieve inferior results in the culture of literary expression. Something lower but also a negative correlation was achieved by the variables of the written expression and the independent variable the educational medium with the coefficient of correlation -0.76. This correlation suggests that blind and poor pupils with inadequate use of educational media achieve significantly lesser results in the literacy culture. A slightly higher but positive correlation was achieved by the variables of the written expression and the passive vocabulary variable whose coefficient of correlation is 0.84. This linkage suggests that blind and weak pupils have a richer vocabulary that will achieve better results in the culture of literary expression. Also high, but negative correlation was achieved by dictation variables and visual eye variables with the coefficient of correlation (-0.86). This correlation shows that students with a higher degree of visual impairment score lower scores on the dictation test. It follows the coefficient of correlation -0.77 which points to the correlation between the dictation variable and the variable educational medium. This correlation suggests that blind and weak pupils using educational medium that is not appropriate for their degree of visual impairment have weaker results on the dictation test. The positive coefficient of correlation (0,96) has a dictation variable and a written expression variable. Relationships point to the fact that blind and poor pupils achieve better results on the dictation test will achieve better results and a test literacy culture test. A somewhat lower but also a positive correlation was obtained by dictation variables and passive vocabulary variables with a coefficient of correlation of 0.87. This linkage indicates that students have a richer dictionary that will have better results on dictates. Significantly lower correlations were obtained with active word variables and passive vocabulary variables whose correlation coefficient is 0.42. The linkage suggests that blind and weak pupils have a more developed dictionary that will have a more developed and cultured oral expression.

Table 1. Correlation analysis

Correlation	sharpness of sight	sex	age	success at school	educational medium	passive dictionary	written expression	dictation	active dictionary
sharpness of sight	1	-0,063	-0,032	-0,043	0,938	-0,835	-0,867	-0,867	-0,234
sex		1,000	-0,055	-0,070	-0,094	0,013	0,068	0,089	-0,134
age			1,000	0,101	-0,062	0,399	0,244	0,295	0,475
success at school				1,000	0,041	0,263	0,172	0,150	0,287
educational medium					1,000	-0,746	-0,763	-0,772	-0,204
passive dictionary						1,000	0,848	0,874	0,423
written expression							1,000	0,969	0,343
dictation								1,000	0,368
active dictionary									1,000

CONCLUSIONS

Based on insights gathered during the writing of the paper, as well as on the results of the research, following conclusions can be drawn:



- Visual impaired children with a higher degree of visual impairment have had poorer results in writing and oral expression compared to children without visual impairment
- Improper use of educational media Visual impaired children show significantly lower results in the culture of written and oral expression compared to children without visual impairment.
- Based on the obtained results we can conclude the importance of timely education and rehabilitation for a successful educational process of the blind and low vision students, appropriate to their specific needs and possibilities, using this approach would increase their success in the educational process, as well as in everyday living skills.

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