

EFFECTS OF WRITTEN EXPRESSION IN CHILDREN OF TYPICAL POPULATION AND CHILDREN WITH DISABILITIES**^{1,*}Mr. Marija Slavković, ²Dr. Sanja Soče and ²Dr. Sadeta Zečić**¹Elementary School "Sava Jovanović Sirogojno", Zemun, Serbia²Faculty of Educational Sciences, University of Sarajevo, Sarajevo, Bosnia and Herzegovina**Received 15th January 2022; Accepted 19th February 2022; Published online 30th March 2022**

Abstract

Changes in the social sphere, innovations in the field of information and communication technologies, the need for capable staff inevitably lead to a change in the current concept of the educational system. This change refers to the novelties introduced since preschool age, in the field of written expression, where the educational program would encourage the best possible development of children, whether they come from a typical population or have certain developmental disabilities. The aim of this research is to determine the effects of written expression in children of typical population and children with disabilities. The research sample consists of two hundred children of the typical population from the educational group and thirty children with developmental disabilities from the development group. During the testing of children from the typical population, a group of thirty children with disabilities emerged. In the further work, we called the obtained group of children an educational group of children with developmental disabilities. The revised version of the Peabody Individual Achievement Test (Revised) was used in the research to assess individual achievements, which enables the assessment of written expression. The individual testing process was conducted during September and October 2019. It was concluded that children of the typical population and children with developmental disabilities from developmental groups show better results on the subtest for written expression in contrast to the detected children with developmental disabilities in the educational group. The presented conclusion points to the need for greater engagement in adapting the preparatory preschool program with the inclusion of necessary exercises that stimulate the development of written expression in children with disabilities in educational groups, all with the aim of more successful inclusion.

Keywords: Written expression, children of typical population, children with disabilities. Inclusion.

INTRODUCTION

In addition to paying great attention to the reading learning program, there are also preparatory preschool programs for writing in inclusive groups, where children with disabilities attend programs for children of a typical population. The standard published by the National Research Council refers to children with disabilities who in our research within the educational group did not successfully master the academic skills in the field of written expression, because they were not detected in time and must reach the end of the preschool period. for Education Statistics, 2010, according to Tompkins, Guo and Justice, 2013):

1. He writes uppercase and lowercase letters independently;
2. Uses phoneme awareness;
3. He writes (unconventionally) in order to convey his meaning;
4. Builds models of some conventionally spelled words;
5. Demonstrates awareness of the difference between "children's writing" and conventional spelling;
6. Write your own name and surname, as well as the names of some friends;

Research on learning to write in preschoolers is scarce and has generally concluded that children with disabilities in the inclusive group show poorer results on writing tests than children in the typical population (Burns & Griffin, 1998, according to Missal 2006). The results of Berninger *et al.* (Berninger *et al.*, 1998) show that writing is not just a motor process, but a process based on knowledge of letters.

In order to write one letter, a child with developmental disabilities must connect a verbal string with a certain form, have a precise image of the letter form in memory and be able to recall it from memory. Research by Abbott & Berninger (1993) shows this direct link between letter skills and letter writing and even suggests that poor writing is the result of poor letter literacy rather than motor impairment, which is mostly the case in children with developmental disabilities. , preschool age, which was shown in this study. That is why it is necessary to recognize the abilities and sensibilities of children in the process of early intervention and accordingly give diagnoses on the basis of which children with disabilities will develop individual educational plans (hereinafter IEPs), which will help children It is very important for children with disabilities to envisage additional programs for the development of writing, aimed at improving children's linguistic comprehension of spoken voices. This would help in the development of initial writing, which would contribute to greater success of integration in the preschool and later in the school system.

METHODS**Sample**

The sample included 200 respondents from the typical population and 30 respondents with developmental disabilities, at the beginning of the study, of both sexes. Respondents were divided into three groups. The first group included children with intellectual disabilities who attended preschool development groups and consisted of 30 respondents (hereinafter: the development group). Data related to children from this group were taken from the findings and decisions of

the interdepartmental commission. During the testing of children who attended regular educational preschool groups, children with significantly lower values on the subtest for academic achievement in the field of written expression stood out. It was found that their mean and maximum values of achievement on these subtests are significantly lower than other children from the typical and developmental group. This conditioned that these children be separated into a special group, that is. a group of children with developmental disabilities who attend regular preschool groups and consisted of 30 respondents (hereinafter: the educational group). Other children from regular educational groups, who had higher average and maximum values of achievement on the academic subtest written expression, were classified in a typical group, in that group after testing, 170 respondents remained.

Instruments and procedure

After the formation of the sample, as well as obtaining informed consent, both from parents or guardians, and from the heads of institutions in which the research was conducted, an assessment was conducted. Data on the degree and type of disability of the respondents, the chronological age of the respondents and the level of education of the parents were taken from the children's files. The research was conducted in September and October 2019. During the research, direct contact with the respondents was necessary, which was conditioned individually, in isolated rooms in kindergartens and schools. The independent variable shows attention, and the dependent variable shows general information.

PIAT-R (Markwardt, 1998) was used to assess individual academic achievements in the field of general information of children. The revised Peabody Individual Achievement Test (PIAT-R) is a test for assessing achievement that is used for individual analysis. The test provides insight into children's achievements in five areas, and in this paper we use only one area and that is written expression. It is in fact a revision of the previous 1970 test, the Peabody Individual Achievement Test (PIAT; Dunn & Markwardt, 1970), with updated standards, a larger number of items and updated content of items.

Subtest written expression

The fifth subtest for the assessment of Written Expression was given and graded differently from all other subtests. This new subtest assessed the examinee's ability to express himself in writing on two levels. The first level is intended for preschoolers and champions and it assesses the skills that precede writing: copying and writing letters, words and sentences by dictation.

Subtest administration: (First level for preschoolers and champions) The number of points that can be earned by writing the name determines which next item will be administered. If the respondent writes his name correctly, he is assigned eight consecutive correct letters (which is the maximum), and thus the respondent acquires the possibility of switching to item four. If, on the other hand, he is given less than eight correct letters, the examination should begin with practice items. Testing is conducted until the last item. This subtest does not determine the basic or final level. However, dictation tasks (9-18) proved to be too difficult for some respondents. If the difficulties become quite obvious, the testing is stopped.

We set up the appropriate form for entering the answer in front of the respondent and gave him instructions: " First you need to write your name on this line. Write your first and last name, if you can. You can write in either printed or written letters. "

Rules for scoring written name and surname

We score one point for each consecutive correctly written letter, up to a maximum of eight points. We count the letters until the first mistake or until the end of what is written. Scoring is free and we always add a point to the respondent if we are in doubt about whether the word is correct. It is not necessary for the respondent to write his / her full name. Abbreviated forms can also be accepted. We accepted both printed and written letters. If the respondent has more than one name, they are also counted. If the respondent writes correctly and the name and surname that have less than eight letters in total, we awarded that respondent eight points. It is also accepted if the respondent first writes the last name, then the first name. Letters are counted only until the first mistake. An error can be: omission, addition, illegible letter, or mirror letter. Bad line writing and inadequate capitalization are not considered a mistake. It should be obvious which letters make up the name and which the last name. It is not considered a mistake if there is no space between the name and the surname, provided that the beginning of the surname is written in capital letters. Respondents who scored eight points continued with further instructions from the examiners: "Now I will show you some words and some sentences. I want you to write them on this sheet the way you see them. Each time I will show you where to type them."The research lasts until the respondent makes three consecutive mistakes. If he makes them, he is interrupted with further examination.

RESULTS

Research results obtained on the written expression subtest

In the next segment, the results of the assessment of the achievements of children with developmental disabilities from the developmental and educational group, as well as children from the typical group subtest of personal expression are presented. The assumption is that there is no significant difference in the achievements of groups on the subtest of Written Expression.

Table 1. Average values of Z scores of three groups of respondents on the written expression subtest

Group	AS	SG
TG	0.43	0.06
EG	-1.39	0.05
DG	-1.04	0.11

Legend: TG = typical group, EG = Educational Group, DG = Development Group, AS = Arithmetic Mean, SG = standard error.

Table 1 shows the mean values of Z scores of all three groups of examined children on the written expression subtest. Inspecting Table 1, it can be seen that children from the typical group have the best results compared to children with disabilities who are classified as either in the developmental or educational group.

Table 2. Differences between the examined groups in the achievements on the written expression subtest

Written expression	df	F	p
	2	110.60	0.00

Legend: df = degrees of freedom, F = quotient F, p = significance.

In order to establish whether there are statistically significant differences between the arithmetic means of the Z scores between the examined groups, a one-factor analysis of variance was performed (Table 2). The results indicate that there are statistically significant ($p < 0.05$) differences between groups.

Insight into the p values obtained by the subsequent Sheff's test (Table 3), it can be seen that children from the typical group had statistically significantly better achievements on the written expression subtest compared to children with disabilities either from the educational or developmental group. The average values of the achievements of children from the educational and developmental group do not differ significantly.

Table 3. Determining significant differences between comparison groups on achievements on the written expression subtest

Written expression	TG	DG
DG	0.00	
EG	0.00	0.52

Legend: DG = development group, EG = educational group, TG = typical group

Determining the existence of a correlation between the chronological age of children and the achievement of the written expression on the subtest was done with the Pearson test (Table 4). It was found that a significant ($p < 0.05$) positive correlation between the above parameters exists both in individual comparison groups and in the total sample. In this test, the correlation in the educational group that is of the highest intensity stands out. In the typical and developmental group, as in the whole sample, the correlation is of medium strength.

Table 4. Correlation of chronological age and achievement on the written expression subtest

Group	r	p
TG	0.44	0.00
EG	0.68	0.00
DG	0.54	0.00
Typical sample	0.55	0.00

Legend: TG = typical group, EG = educational group, DG = developmental group, r = Pearson's correlation coefficient, p = significance.

DISCUSSION

Discussion of the results obtained on the written expression subtest

We gained insight that children with disabilities show far poorer results on the writing test compared to children from the typical population. The results indicate that there are statistically significant ($p < 0.05$) differences between groups. Subsequent Shefe test, it can be noticed that children from the typical group had statistically significantly better achievements on the subtest of written writing in relation to children with developmental disabilities, whether they are from the

educational or developmental group. The average values of the achievements of children from the educational and developmental group do not differ significantly. The two-factor analysis of variance gave the following results: group affiliation is a significant factor influencing the differences observed in the achievements of children in the written expression subtest, while the sex of children does not affect this variable. Insight into the "p" values obtained by the subsequent Chief's test, it can be seen that children from the typical group had significantly ($p < 0.05$) better results in the subtest of written expression than children with disabilities, whether classified in developmental or educational group. The achievements of children from the developmental and educational groups do not differ statistically significantly ($p > 0.05$). We can conclude that the observed better achievements of children from the development group are not statistically significant. No significant difference in achievement was observed in any of the comparison groups. Pearson's correlation test gave us an insight into the relationship between children's achievement in the written expression subtest and their chronological age. There is a positive and statistically significant ($p < 0.05$) correlation between chronological age and achievement on this subtest in all comparison groups and when the total sample was analyzed. The correlation in the educational group that is of the greatest intensity stands out. In the typical and developmental group, as in the whole sample, it is of medium strength.

The analysis of testing in children from the educational group showed a very low positive value of the difference in Z scores on the subtest of written expression. We can conclude that this result was influenced by the fact that children with disabilities in the educational group nor modified programs, and therefore we believe that their achievements are significantly lower. If children with disabilities do not possess the stated standard of knowledge, as we have proven in our research, they show a more difficult fit into the school system (Snow *et al.*, 1998). Writing is not just the reverse process of reading (Read, 1981). To begin with, children with developmental disabilities who have problems with writing, unlike children from the typical population, can learn how to write letters, using the teaching procedure proposed by Graham (Graham, 2002). Practicing children with disabilities would consist of learning written letters according to a visual model, practicing letter names while writing them, writing letters based on memory and rounding off your best letter. Writing is basically the use of language by hand (Language by Hand), which includes certain processes that are inherent in other types of language (listening, speaking and reading), but also contains certain processes that are unique to him (O'Connor & Jenkins, 1995). Children with disabilities could start by spelling simple words, merging and segmenting words. Learning to write letters and spelling words, in the way offered, to children with disabilities, would help in learning to name letters and read words in preschool age, and thus would be less different in the adoption of writing skills than children from the typical population (O'Connor & Jenkins, 1995). Graham et al (Graham, Harris, & Fink, 2000 according to Edwards, 2003) examined the impact of writing instruction on the writing process, letter literacy, and writing success of first graders with and without identified cognitive impairments. Classes lasted 27 hours and included four activities:

1. Alphabet warm-up (for 2 minutes): the children learned to name each letter, they had to match the name of the letter

- with the corresponding letter and practiced writing the letter in the context of the alphabetical sequence - which letter precedes and follows in the alphabet,
2. Practicing the alphabet (6 minutes): the teacher shows how to write a certain letter and the children then practice writing them independently. The children were asked to name the letters when writing and to complete their best written letter,
 3. Rocket Alphabet (5 minutes): This exercise is focused on fluent writing. For example. the children were asked to rewrite a 26-34 letter sentence in three minutes,
 4. Alphabet fun (2 minutes): an exercise aimed at manipulating words. For example. children were asked to write letters both high and thin, and then small and thick.

Children who encountered similar classes in preschool, whether they have developmental disabilities or not, showed better results than children from the control group who did not have prior knowledge. Namely, the children from the experimental group had a better performance on the tests of writing both letters and content. They could name the letters of the alphabet more precisely, write them, and also write the text more accurately. Six months later, all but one difference between the children in the two groups survived. The exception was accurate text writing. The results of the study indicate the importance of teaching writing even before entering the school system, because mastering writing skills not only facilitates the initial process of learning to write but can affect the learning process over time, at least for 6 months (Graham, Harris, & Fink, 2000., according to Edwards, 2003). Unfortunately, our study shows that children with developmental disabilities in educational groups show far poorer results on the writing test compared to children in the typical population. Such results could have been avoided if the children had been in a program whose IEPs were not only well designed but also properly implemented, as well as that didactic material was used that would interest children with disabilities in the writing process.

Conclusion

Early age children, through various activities, want to master their environment, and thus the instruments of their own development, and the best way to do that is directed and guided play. In the exploratory nature of the game, we can look for solutions to bring the content closer, such as written expression to children with disabilities. Learning through play at the preschool age contributes to overcoming the existing discontinuity between the system of preschool and school upbringing and education. From this research, a proposal was given, which would improve the preparatory preschool writing program for children with developmental disabilities. The program would include academic components related to writing, precision and fluency of spelling and spelling, through play, because play is the fastest way to acquire knowledge in children with disabilities. Play processes based on written expression lead to the creation of new mental structures, which would help children with disabilities to get closer to their friends from the typical population. The contents of curricula related to written expression can be realized by applying properly measured and designed activities in a given system, with the support, encouragement and guidance of educators and parents, as well as the mandatory support of a special educator. It is also necessary to have a good knowledge of the age and psychophysical characteristics of each child, so that a

child with developmental disabilities with adequate diagnosis and thinking has a ready IEP in the preschool system as well as adequate selection of didactic material. Play based on written expression enables and facilitates the gradual transition from preschool to school development period, free, spontaneous and creative expression as well as the development of children's potential through written activities. Properly designed and organized, with adequate supervision by an expert in it, the game designed in the mentioned way realizes its educational function. In addition, by learning to write through play and writing an IEP in accordance with the sensibilities and abilities of a child in preschool age, it is possible for children with disabilities to integrate faster and easier into the school system.

Acknowledgements

The authors would like to thank every participant for his effort and time.

Funding - No sources of funding were used to assist in the preparation of this manuscript.

Conflicts of interest - The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES

- Abbott, R. D. and Berninger, V. W. 1993. Structural equation modeling of relationships among developmental skills and writing skills in primary- and intermediate-grade writers. *Journal of Educational Psychology*, 85(3), 478–508. <https://doi.org/10.1037/0022-0663.85.3.478>
- Berninger, V. W., Vaughan, K., Abbott, R. D., Brooks, A., Abbott, S. P., Rogan, L., Reed, E. and Graham, S. 1998. Early intervention for spelling problems: Teaching functional spelling units of varying size with a multiple-connections framework. *Journal of Educational Psychology*, 90(4), 587–605. <https://doi.org/10.1037/0022-0663.90.4.587>
- Dunn, L. M. and Markwardt, F. C. 1970. *Peabody individual achievement test*. American Guidance Service, Incorporated.
- Edwards, L. 2003. Writing Instruction in Kindergarten: Examining an Emerging Area of Research for Children with Writing and Reading Difficulties. *Journal of Learning Disabilities*, 36(2), 136–148. <https://doi.org/10.1177/002221940303600206>
- Graham, S., Harris, K. R. and Chorzempa, B. F. 2002. Contribution of spelling instruction to the spelling, writing, and reading of poor spellers. *Journal of Educational Psychology*, 94(4), 669–686. <https://doi.org/10.1037/0022-0663.94.4.669>
- <https://doi.org/10.1007/s11145-012-9374-7>
- Markwardt, F. C. (1998). *Peabody Individual Achievement Test – Revised* (Normative update). Circle Pines, MN: American Guidance Service.
- Missall, K. N., McConnell, S. R. and Cadigan, K. 2006. Early literacy development: Skill growth and relations between classroom variables for preschool children. *Journal of Early Intervention*, 29, 1–21.
- O'Connor, R. E., Jenkins, J. R. and Slocum, T. A. 1995. Transfer among phonological tasks in kindergarten: Essential instructional content. *Journal of Educational*

- Psychology*, 87(2), 202–217. <https://doi.org/10.1037/0022-0663.87.2.202>
- Read, C. 1981. Writing is not the inverse of reading for young children. In C. Frederickson & J. Domminick (Eds.), *Writing: The nature, development, and teaching of written communication* Vol. 2 (pp. 105–107). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Snow, C.E., Burns, S. & Griffin, P. (Eds.) 1998. Preventing reading difficulties in young children. Washington, DC: Natinoal Academy press.
- Tompkins, V., Guo, Y. and Justice, L. A. 2013. Inference generation, story comprehension, and language skills in the preschool years. *Reading and Writing*, 26, 403-429.
