



Research paper

The Effect of Education Based on Gardner's Multiple Intelligences on Reading Skills and Academic Motivation in Children with Dyslexia

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Abstract

The purpose of this study was to determine the effectiveness of education based on Gardner's multiple intelligences (EBOGMI) on reading skills and academic motivation in children with dyslexia in Rasht. The method was quasi-experimental, in the form of pretest/posttest with the control group. by convenience sampling method, 30 participants who met the inclusion criteria were selected. Research instruments were Reading and Dyslexia test- NEMA, Multiple intelligences inventory and Hermans measure of achievement motivation. After pretest, the experimental group underwent EBOGMI weekly in twelve 45 minutes sessions. Data were analyzed using the analysis of covariance test. The results showed, EBOGMI as learning language, by basing on intellectual abilities, played a role in promoting the reading skills and academic motivation in children with dyslexia; therefore, the use of education based on Gardner's multiple intelligence is recommended.

Keywords: Academic motivation, dyslexia, education based on Gardner's multiple intelligences, reading skills

Introduction

More than 2.4 million children in the public school system have specific learning disorder (Alloway et al., 2020). The most common group of learning disorders is dyslexia (American Psychiatric Association (APA), 2023). It includes 20 percent (Shaywitz et al., 2021) of the total number of students. For many children with dyslexia, academic motivation (Tucker et al., 2020), which directly affects their academic performance, gradually decreases during elementary school (Ghadampour et al., 1400). Up to now, different educational interventions have been used to solve the problems of children with dyslexia, education based on Gardner's multiple intelligences is one of them. Education based on Gardner's multiple intelligences, due to relying on the normal intelligence of children with dyslexia (APA, 2023), which is one of the strengths of these children, can control and improve their reading skills and academic motivation (Abenti, 2020). Due to dyslexia's high prevalence and due to the fact that there is no school based on Gardner's multiple intelligences in Iran, in order to plan educational and lesson plans in line with the specific intellectual and mental abilities of each children with dyslexia; It seems that the results of the this study can be used in the educational organization

to improve the education of children with dyslexia, join other related researches, and finally reach the ultimate goal of science; educational theory. Therefore, the research hypothesis was : Education based on Gardner's multiple intelligences has an effect on reading skills and academic motivation in children with dyslexia.

Method

The research method was a quasi-experimental, in the form of pretest/posttest with a control group. The statistical population consisted of all 7 to 11-year-old children with dyslexia in Rasht who were referred to learning disorders centers licensed by the Organization of Psychological System and pediatric psychiatric clinics in 2023. The sample of the research was 30 children from the statistical population who were diagnosed with dyslexia based on their academic performance and diagnostic tests by the teachers and psychologists of the medical centers. The selection of the sample was available and their placement in two experimental (15 people) and control (15 people) groups was random. The children of the experimental group received twelve 45-minute education based on Gardner's multiple intelligences (linguistic intelligence, logical-mathematical intelligence musical intelligence, spatial-visual intelligence, bodily-kinesthetic intelligence, intrapersonal intelligence, interpersonal intelligence, existential Intelligence, & naturalistic Intelligence) sessions. During this period, the children of the control group only received their educational center's education. The collected data were analyzed with the analysis of covariance test in the SPSS-26 software.

Tools

Multiple Intelligences Inventory (MII): This questionnaire has 80 items. The range of score is from 0 to 400. Cronbach's alpha was 0.92 (Doblon,2023). In the present study, the reliability with Cronbach's alpha coefficient was 0.85.

Reading and Dyslexia Test- NEMA: This questionnaire has 143 items. The range of score is from 0 to 286. Cronbach's alpha was 0.78 (Nemati et al.,2022). Abbasi Fashami et al. (2021) reported concurrent validity 0.73 to 0.86. In the present study, the reliability with Cronbach's alpha coefficient was 0.66.

Hermans Achievement Motivation Questionnaire (HAMQ): This questionnaire has 29 items. The range of score is from 0 to 116. Hermans (1970) reported concurrent validity 0.30 to 0.57 and retest stability 0.84. In the present study, the reliability with Cronbach's alpha coefficient was 0.74.

Results

In table 1, after removing pre-test's effect on the dependent variables, it can be seen that there is a significant difference between the adjusted averages of reading skills and academic motivation's scores according to group membership in the post-test step ($P < 0.05$).

Table 1. The results of single-variable analysis of covariance in relation to reading skills and academic motivation

Variables	SS	DF	MS	F	Eta	p
Reading skills	1251.58	1	1251.58	46.00	0.63	0.00
Academic motivation	638.59	1	638.59	20.39	0.43	0.00

Education based on Gardner's multiple intelligences has increased experimental group's reading skills(63%), its components (table2), and academic motivation(43%)in the post-test step.

Table 2. The results of univariate analysis of covariance in relation to component of reading skills

Variables	SS	DF	MS	F	Eta	p
Reading words	663.61	1	663.61	105.54	0.85	0.00
Word chain	1503.10	1	1503.10	166.87	0.90	0.00
Rhyme	2030.79	1	2030.79	29.63	0.62	0.00
Name the image	807.39	1	807.39	20.04	0.52	0.00
Understanding text	3092.48	1	3092.48	34.09	0.65	0.00
Understanding words	2391.16	1	2391.16	82.71	0.82	0.00
Sounds	4945.63	1	4945.63	28.54	0.61	0.00
Reading unwords	2332.23	1	2332.23	18.43	0.50	0.00
Letter	2998.10	1	2998.10	41.60	0.69	0.00
Category	2039.40	1	2039.40	25.26	0.58	0.00

Discussion and Conclusion

The education based on Gardner's multiple intelligences by providing new multi-dimensional, and appropriate methods to the needs of children with dyslexia in the way of teaching, class management, grouping, presentation of assignments, and evaluation method, can cause the interest and enthusiasm of children with dyslexia to learn and to read. Considering that reading skills are the basis of learning other subjects; As well as academic motivation as the most important prerequisite for learning, as a result of this intervention, it also leads to academic progress. Therefore, Education based on Gardner's multiple intelligences, with its effect on the reading skills and academic motivation of children with dyslexia, can become an educational theory and part of all schools, including children with and without psychological disorders' educational program along with other related researches. This research was conducted in children with dyslexia aged 7 to 11 years; Therefore, caution should be exercised with generalizing this research results to other psychological disorders and educational degrees. Also, as practical suggestions, we can mention the implementation of education based on Gardner's multiple intelligences in learning disorders centers, prioritizing targeted and unique

education, teaching parents and teachers how to implement the plan as the learning language of children with dyslexia.

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Conflict of Interests

The authors did not declare a conflict of interest.



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