



eISSN: 2322-1445

Volume 8, Issue 2, autumn and winter 2022

Iranian Journal of Educational Society

The Effectiveness of Cognitive and Metacognitive Strategies Teaching on Academic Motivation, Academic Engagement and Quality of Life in School of Students with Specific Learning Disorder in Hamadan City

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Research Paper

Abstract

Receive: 2020/07/21
Accept: 2020/12/10
Published:

Keywords:

Cognitive and metacognitive strategies teaching, academic motivation, academic engagement, quality of life in school, students.

Article Cite:

Kokabi Rahman E, Taghvaei D, Pirani Z. (2022). The Effectiveness of Cognitive and Metacognitive Strategies Teaching on Academic Motivation, Academic Engagement and Quality of Life In School of Students with Specific Learning Disorder In Hamadan City, Iranian Society of Sociology of Education. 8(2): 257-266.

Purpose: This research was conducted with the purpose of mediating the role of mindfulness in the relationship between cognitive abilities and wisdom in students.

Methodology: The cross-sectional research method was correlational. The statistical population of this research was made up of all the students of the free universities of Tehran province in the academic year 2021-2022, of which 380 people were selected by multi-stage cluster sampling method. In this research, tools of wisdom (Ardelt, 2003), cognitive abilities (Najati, 2013) and mindfulness (Ryan and Brown, 2003) were used, all of which had acceptable validity and reliability. In order to analyze the data, structural equation modeling was used with SPSS-V23 and Lisrel-V8.8 software.

Findings: The research findings showed that the model has a good fit. Also, the findings showed that cognitive abilities had a direct effect on the wisdom of students; The effect of cognitive abilities on wisdom directly ($t = 11.33$ and $\beta = 0.73$) and indirectly cognitive abilities on students' wisdom through mindfulness was confirmed with 95% confidence.

Conclusion: According to the findings, the results show that increasing the variables of cognitive abilities and mindfulness can be expected to increase wisdom in students.



<https://doi.org/10.22034/ijes.2021.541983.1184>



<https://dorl.net/dor/20.1001.1.23221445.1401.15.1.1.0>



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Detailed abstract

Purpose: Specific learning disorder is a neurological disorder that begins in early school age and may not be diagnosed until adolescence or even young adulthood, and causing problems in learning and education. This disorder according to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders is a neuro-developmental disorder with a biological origin that causes cognitive and behavioral abnormalities and is located in at least one of the three fields of reading, writing and math. Specific learning disorder manifests as an impairment and inability to listen, think, speak, read, write, spell words, and math calculations. Specific learning disorder causes many academic problems, including academic motivation. Academic motivation is an internal force that leads the learner to comprehensively evaluate his performance according to the highest standards, strive for success in performance, and enjoy the pleasure created by success in performance. Academic motivation is a psychological state and when the learner perceives himself as a learner with necessary competence and autonomy and high efficiency. Another problem related to specific learning disorder is the drop in academic engagement, which is one of the important indicators of the quality of education and academic achievement, and its lack can lead to emotional and affective problems. Academic engagement means self-initiated and purposeful participation in academic activities, which is a kind of stable psychological investment that facilitates learning along with a positive emotional and cognitive state in individual activities. Learners with high academic engagement usually attend the learning environment more regularly, have a higher concentration in learning, show more coordination with the rules of the learning environment, have higher self-awareness and self-regulation related to learning, and show more favorable and successful academic performance. Among other problems related to specific learning disorder can mention to the decrease in the quality of life in school. Quality of life means people's evaluation and perception of the life situation based on the cultural context and value system of the situation which they live in and the relationship these factors have with expectations, goals, criteria and personal interests. The quality of life in school means the cognitive and emotional assessment of students from sense of well-being, welfare and overall satisfaction from all positive and negative experiences that are rooted in school activities. This structure includes the feeling of satisfaction from school, commitment to academic tasks, belonging to school, participation in academic activities, perception of safety from school and positive perception from teachers and peers, and it shows the evaluation, feeling and attitude of students towards school. One of the ways to improve and promote the variables related to education is to use the method of cognitive and metacognitive strategies teaching, which as an acquired and learnable strategies represent measures for better learning and remembering of content and concepts. Cognitive strategies are strategies for learning and include three strategies of rehearsal, elaboration and organization, and metacognitive strategies are strategies for monitoring on learning and cognitive strategies and include three strategies of planning, monitoring and regulation. Cognitive and metacognitive strategies are measures and strategies for better learning and remembering of contents and a powerful tool to reveal how to develop the learning process and led to increase self-learning skills, promote learner independence and facilitate learning abilities. Specific learning disorder causes many academic problems in students. As a result, the aim of this study was determine the effectiveness of cognitive and metacognitive strategies teaching on academic motivation, academic engagement and quality of life in school of students with specific learning disorder.

Methodology: This study was a semi-experimental with a pre-test and post-test design with a control group. The research population consisted of elementary male students with specific learning disorder who referred to the Hamedan education counseling core. The sample size was considered to be 40 people who after checking the inclusion criteria were selected by the purposeful sampling method and by the random method were replaced into two equal groups. The inclusion criteria were included the written consent of the parents, having a specific learning disorder, not having other psychological disorders, and not having a history of receiving cognitive and metacognitive

strategies education, and the exclusion criteria were included the absence of more than two sessions and incomplete completion of the research instruments. The experimental group received ten 60-minute sessions of Palincsar and Brown cognitive and metacognitive strategies teaching (1981) and the control group remained on the waiting list for educating. Data were collected with the academic motivation scale (Harter, 1981), academic engagement questionnaire (Zerang, 2012) and quality of life in school questionnaire (Ainley & Bourke, 1992) Which Cronbach's reliability value of academic motivation scale, academic engagement questionnaire and quality of life in school questionnaire was obtained by calculating the correlation coefficient between the items 0.95, 0.86 and 0.90, respectively. Also, data after collected with standard instruments of academic motivation, academic engagement and quality of life in school were analyzed by multivariate analysis of covariance method in SPSS software.

Fundings: Examining the assumptions of the multivariate analysis of covariance method showed that the assumption of normality of the variables of academic motivation, academic engagement and quality of life in school of students with specific learning disorder in the experimental and control groups in the pre-test and post-test stages was not rejected based on the Shapiro-Wilk test ($P > 0.05$). Also, the assumption of equality of variances of the variables of academic motivation ($F = 2.32$, $P = 0.136$), academic engagement ($F = 0.24$, $P = 0.627$) and quality of life in school ($F = 0.98$, $P = 0.344$) of Students with specific learning disorder were not rejected based on Levine's test. In addition, the assumption of equality of covariance matrices of students with specific learning disorder was not rejected based on Box's M test (Box's $M = 12.72$, $F = 1.93$, $P = 0.071$). As a result, the use of multivariate analysis of covariance method was allowed. The results of this study indicated that the cognitive and metacognitive strategies teaching increased all three variables of academic motivation ($F = 33.14$, $P = 0.001$), academic engagement ($F = 9.54$, $P = 0.004$) and quality of life in school ($F = 9.52$, $P = 0.004$) of students with specific learning disorder.

Conclusion: Based on the results of this study, can be used from cognitive and metacognitive strategies method in order to improve academic variables such as academic motivation, academic engagement and quality of life in school of students with special learning disorders. Another practical suggestion is to hold educational workshops of cognitive and metacognitive strategies for students and teachers and even students' parents, so that in this way the academic variables related to students can be improved.