



The effect of developmental gymnastics exercises on mental rotation and its relationship with the development of motor skills of female elementary school students

Poster Presentation

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Abstract

Introduction: Motor development is the process by which a child learns different motor patterns and motor skills (1, 2). From a cognitive perspective, research shows that the practice of spatial skills is an important factor in the development of these skills and problem-solving abilities (3, 4).

The aim of this study was to investigate the effect of developmental gymnastics exercises on mental rotation and its relationship with the development of skills of female elementary school students.

Methods: Participants in this study were all healthy and non-athlete female students in the first grade of the elementary school in Mashhad. Using the purposive sampling method, 30 people were selected based on the characteristics of the Individual Characteristics Questionnaire, and after pre-testing using the checklist of the large Ulrich 2016 motor development test were randomly divided into three groups of 10 people. Mental rotation was also measured by a pen-paper mental rotation test with a reliability coefficient of 0.88. The first group performed a well-proportioned growth program in 8 weeks and three sessions of 45 minutes per week. The second group did physical education activities in schools during this period, and the third group did not have regular activities. At the end of the interventions, a post-test was performed.

Results: The results showed that both the motor skills development and mental rotation in the developmental gymnastics group showed a greater improvement compared to school physical education activities, which was statistically significant ($P < 0.05$). There was a significant positive relationship between changes in motor skill development and mental rotation ($r = 0.69$ and $p = 0.001$).

Conclusion: It seems that a developmental gymnastics program leads to a greater increase in the development of students' motor skills and mental rotation so that with an increase in mental rotation, the development of motor skills also improves.

Keywords

Motor skills development; mental rotation; developmental exercises; Students

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