MATHEMATICS LEARNING STRATEGY AND MATHEMATICS ACHIVEMENT AMONG MIDDLE SCHOOL STUDENTS IN THE NORTH OF JORDAN

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Abstrak


Kata kunci: Nombor, Algebra, Geometri, visualisasi spatial, Strategi Pembelajaran Matematik.
Abstract

The results of 1999, 2003, 2007 and 2011 Trends in International Mathematics and Science Study (TIMSS) showed that Jordanian 8th grade students’ achievement in mathematics is low. Mathematics Learning Strategy (MLS) has been identified as one of the attributing factors. To date, there is little study on MLS and mathematics achievement among Jordanian 8th grade students. The study aimed to identify the level of differences between genders based on number, algebra, geometry, mathematics achievement and spatial visualization, and to what extent would the student’s MLS factors such as attitude, motivation, self-regulation, self-efficacy and mathematics anxiety contribute to mathematics achievement. Additionally, the study aimed to determine whether spatial visualization mediates between the MLS factors and mathematics achievement. The respondents in this study, who comprised of 360 students, were selected through stratified random sampling, from eight public middle schools in Alkoura District in the North of Jordan. The study used 65 items to assess the MLS. The mathematics test contains 30 items (number, algebra & geometry) while the spatial visualization test contains 32 items. The findings showed that female students scored higher than male students in numbers, algebra, and mathematics test but there are no gender differences in geometry scores. Male students performed better than their female counterparts in spatial visualization. The results also showed that mathematics attitude, motivation, self-regulation and self-efficacy contributed to mathematics achievement except mathematics anxiety. Spatial visualization plays a mediating effect between mathematics achievement and attitude, motivation, and mathematics anxiety. This study contributes to knowledge and social cognitive theory about the students’ affective domain base on MLS factors and spatial visualization which is important as prerequisite knowledge for learning mathematics. Mathematics educators in Jordan need to consider the MLS factors when teaching mathematics to 8th grade students to help improve their mathematics achievement.

Keywords: Numbers, Algebra, Geometry, Spatial visualization, Mathematics Learning Strategy.
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## List of Abbreviations

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<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>MoE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>NCTM</td>
<td>National Council of Teacher of Mathematics</td>
</tr>
<tr>
<td>TIMSS</td>
<td>Trends in International Mathematics and Science Study</td>
</tr>
<tr>
<td>UNRWA</td>
<td>United Nation Relief and Work Agency</td>
</tr>
<tr>
<td>CTT</td>
<td>Classical Test Theory</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
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CHAPTER ONE
INTRODUCTION

1.1 Background of the Study
The educational system is primarily viewed as a significant factor forming the basis of an individual’s development and progress, which forms the core of countries’ development. As such, more and more focus is being emphasized on the educational systems promotion on a global scale. In the context of Jordan, the government has made considerable efforts in developing its educational system. Such system has experienced tremendous development and increasing progress that date back to the 1920s (Al-Jaraideh, 2009). In addition, Jordan undertook the responsibility of the development of an extensive and high-quality system for its citizens’ development. As a result, citizens residing in poor and remote areas have had access to schools and education (Al-Jaraideh, 2009). The country’s position in favoring basic education over higher education has improved the literacy levels and facilitated the achievement of higher degrees of enrollment. Primary education in Jordan, while freely provided, is not compulsory and it comprises of ten classes from first to tenth class.

Study curricula all over the world, including Jordan, have witnessed a radical change – changes in curricula and courses of all education levels. Specifically, in the last two decades, mathematics curriculum has undergone a lot of development on both the international and local level. On the international arena, more developed countries have begun a comprehensive review of the mathematical teaching program to develop and make them up-to-date to keep abreast of the needs of the 21st century.
The contents of the thesis is for internal user only
REFERENCES


