

LEARNING STRATEGIES IN MATHEMATICS AMONG SECONDARY SCHOOL BOYS AND GIRLS IN RELATION TO THEIR ACADEMIC ACHIEVEMENT

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Abstract: The main purpose of the study is to investigate the relationship between learning strategies in mathematics with academic achievement in mathematics among ninth and tenth class secondary level students. Sample of the study consisted of 100 students out of which 50 were boys and 50 were girls. This sample was chosen from two girls' school and two boys school in Salem District. Learning strategies in mathematics scale was standardized by Pintrich et.al (1991). It consisted of 68 statements. Academic achievement was measured by the marks obtained by the sample in their recently held examination in mathematics in their school. Normative survey method was adopted and stratified sampling technique was employed for the study. The data collected were subjected to the statistical technique like t – test and correlation. The findings of the present study reveal that the boys differed in their mathematical achievement from girls. Girls achieved better results as compared to boys. Learning strategies in mathematics and academic achievement in mathematics did not go together.

Keywords: Learning strategies, Mathematics, Academic Achievement, Secondary Education

INTRODUCTION

Learning occupies a very essential place in individual life. It is an ultimate process, which is considered equivalent to modify, change, develop, improve and adjust. It is not limited to school learning, but it is a broad term which leaves impression on the individuals. It plays a very important role in influential behaviour of an individual. It is the basis of success in life. The miracles of present day civilization are the results of learning. In order to develop presentation and communication techniques that facilitate successful learning, a teacher must have some planning regarding how pupils learn. In addition to course lectures, school experiences also reveal the very great differences in the way of learning individuals. Human behaviour, motivation, achievement, personality and self-esteem have impact on the activity of learning.

“Learning strategies include emotional, motivational, meta-cognitive, cognitive, and behavioural activities and processes that facilitate significant understanding, learning and processing as the integration of the new knowledge in mind.” - Weinstein et al. (2010)

Academic achievement can be defined as excellence in all academic disciplines, in class as well as extra- curricular activities. It includes excellence in sporting, behaviour, confidence, communication skills, punctuality, assertiveness, arts, culture and the like.

REVIEW OF RELATED LITERATURE

Amber D. Dumford¹, Cindy A. Cogswell and Angie L. Miller.,(2016) inquired about who, what, and where of learning strategies. The results indicated college student characteristics were significant predictors of their use of learning strategies. Students, who were online-learners [first-generation, female, transfers, older, Black or African American] in the bio-logical sciences, social sciences, or health professions, were more likely to use learning strategies.

Gitonga Harun Mwangi and Robert Kasisi .,(2014) studied the effects of computer interaction in learning strategy on students' achievements in secondary school mathematics in Murang'a County, Kahuro Sub- County, Kenya. The result showed that learners taught using computer and interactive learning strategy, performed better than those taught using normal or conventional learning methods. The results also showed that there was no significant gender difference in achievement when learners are taught using computer interactive learning strategy.

Javier Gasco, Jose Domingo Villarroel and Alfredo Goni.,(2013) compared the use of learning strategies in mathematics in 8th and 9th grade. The findings showed statistically significant differences in favour of 9th grade students in the employment of organization, metacognition and help seeking strategies.

TITLE OF THE PROBLEM

The title of the problem as stated as “**LEARNING STRATEGIES IN MATHEMATICS AMONG SECONDARY SCHOOL BOYS AND GIRLS IN RELATION TO THEIR ACADEMIC ACHIEVEMENT**”

OPERATIONAL DEFINITIONS

LEARNING STRATEGIES IN MATHEMATICS

Learning strategies have long been main issue in the field of education. It is commonly accepted that instructional practices should determine and contain learning strategies of individual students for the subject mathematics.

ACADEMIC ACHIEVEMENT

For academic achievement, mathematics marks obtained in half- yearly examination is considered.

SECONDARY LEVEL STUDENTS

Secondary school students indicate the students those who are studying IX and X Standard.

OBJECTIVE OF THE STUDY

- To investigate the significant difference between mean scores of learning strategies in mathematics of secondary level boys and girls
- To study the significant difference between mean scores of academic achievement of secondary level boys and girls in the subject of mathematics
- To analyse the significant relationship between mean scores of learning strategies in mathematics and academic achievement of secondary level girls
- To study the significant relationship between mean scores of learning strategies in mathematics and academic achievement of secondary level boys

HYPOTHESES OF THE STUDY

- There is no significant difference between mean scores of learning strategies in mathematics of secondary level boys and girls
- There is no significant difference between mean scores of academic achievement of secondary level boys and girls in the subject of mathematics
- There is no significant relationship between mean scores of learning strategies in mathematics and academic achievement of secondary level girls
- There is no significant relationship between mean scores of learning strategies in mathematics and academic achievement of secondary level boys

RESEARCH METHOD

Sample

A sample of 100 students was selected through two stage cluster sampling. The procedure of selecting sample was that at the first stage four schools two boy's and girl's schools were randomly selected. Then 50 girls and 50 boys were randomly chosen from these schools.

Research Instrument of the study

The research design of this study was questionnaire survey. In order measure the variable learning strategies in mathematics scale was standardized by Pintrich et.al (1991). It consisted of 68 statements. Each item was to be responded on a five point scale bearing the categories of strongly disagree, disagree, Undecided, agree and strongly agree. Academic achievement was measured by the marks obtained by the sample in their recently held examination in mathematics in their school.

Scoring of Data

The student responses on each item were scored by using the score of 1 for strongly disagree, 2 for disagree, 3 for undecided, 4 for agree and 5 for strongly agree.

DATA ANALYSIS OF THE STUDY

TABLE -1

SIGNIFICANT DIFFERENCES BETWEEN MEAN SCORES OF LEARNING STRATEGIES IN MATHEMATICS OF SECONDARY LEVEL BOYS AND GIRLS

GROUPS	N	MEAN	SD	t VALUE	S/NS
Girls	50	182.84	88.902	0.956	NS
Boys	50	192.80	86.581		

Table 1 shows the obtained t value is 0.956 whereas the table value at 0.05 level of significance showing the real difference between mean score of learning strategies in mathematics of boys and girls is, therefore not significant, so there is no significant difference between mean scores of learning strategies in mathematics of secondary level boys and girls.

TABLE -2

SIGNIFICANT DIFFERENCES BETWEEN MEAN SCORES OF ACADEMIC ACHIEVEMENT IN MATHEMATICS OF SECONDARY LEVEL BOYS AND GIRLS

GROUPS	N	MEAN	SD	T	S/NS
Girls	50	76.82	14.653	0.756	NS
Boys	50	71.62	16.132		

Table 2 indicates the obtained t value is 0.756 whereas the table value at 0.05 level of significance showing the real difference between mean score of academic achievement in mathematics of boys and girls is, therefore not significant, so there is no significant difference between mean scores of academic achievement in mathematics of secondary level boys and girls.

TABLE – 3

SIGNIFICANCE OF CORRELATION BETWEEN MEAN SCORES OF LEARNING STRATEGIES IN MATHEMATICS AND ACADEMIC ACHIEVEMENT OF SECONDARY LEVEL GIRLS

VARIABLES	N	r
LEARNING STRATEGIES IN MATHEMATICS	50	0.102
ACADEMIC ACHIEVEMENT		

Table 3 illustrates, the correlation co – efficient between learning strategies in mathematics and academic achievement scores of the total sample students of girls belonging to government schools of girls was 0.102 whereas the table value of correlation coefficient was 0.150 at 0.05 level of significance. The correlation co-efficient between the variable of learning strategies in mathematics and academic achievement was, therefore not significant.

TABLE – 4

SIGNIFICANCE OF CORRELATION BETWEEN MEAN SCORES OF LEARNING STRATEGIES IN MATHEMATICS AND ACADEMIC ACHIEVEMENT OF SECONDARY LEVEL BOYS

VARIABLES	N	R
LEARNING STRATEGIES IN MATHEMATICS	50	0.09
ACADEMIC ACHIEVEMENT		

Table 4 demonstrates, the correlation co – efficient between learning strategies in mathematics and academic achievement scores of the total sample students of boys belonging to government schools of boys was 0.102 whereas the table value of correlation coefficient was 0.150 at 0.05 level of significance. The correlation co-efficient between the variable of learning strategies in mathematics and academic achievement was, therefore not significant.

MAJOR FINDINGS OF THE STUDY

- There is no significant difference between mean scores of learning strategies in mathematics of secondary level boys and girls.
- There is no significant difference between mean scores of academic achievement in mathematics of secondary level boys and girls
- There is no significant relationship between mean scores of learning strategies in mathematics and academic achievement of secondary level girls
- There is no significant relationship between mean scores of learning strategies in mathematics and academic achievement of secondary level boys

DISCUSSION OF THE STUDY

Amber D. Dumford¹, Cindy A. Cogswell and Angie L. Miller.,(2016) reported female students were more likely to use learning strategies. The findings of the above studies did not confirm to the present study. Since the present study has found that boys were more likely to use learning strategies.

CONCLUSION

The findings of the present study reveal that the boys differed in their mathematical achievement from girls. Girls achieved better results as compared to boys. Learning strategies in mathematics and academic achievement in mathematics did not go together.

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