A Study of Self-Regulated Learning and Academic Achievement of Secondary School Students in Learning Mathematics

L. DARSANA
M.Ed Scholar, Immanuel Arasar College of Education,
Nattalam, Marthandam, Kanyakumri District.

U. V. AJITHA KUMARI
Assistant Professor, Immanuel Arasar College of Education,
Nattalam, Marthandam, Kanyakumri District.

The current study aimed to identify the self-regulated learning and academic achievement of secondary school students in learning mathematics. The sample of the study consisted of 250 students studying in secondary level. Self-Regulated Learning scale (SRL) was developed and standardized by the investigator was used to collect data. The marks obtained by the students in Term II Mathematics Examination were used as an indicator of academic achievement. Data were analyzed by using product moment correlation, t-test and ANOVA test. The results of the study revealed that no significant difference is revealed between the male and female in their self-regulated learning and academic achievement in learning mathematics. Self-regulated learning and academic achievement are significantly correlated to each other. Significant difference was found between mean scores of academic achievements of boys and girls of secondary schools.

Keywords: Academic, Acquisition, Mathematics and Expanding Expertise.

Introduction

In recent years, the concept of SRL has become the focus of applied educational studies as an important variable in boosting academic achievement and bringing about success.

About three decades back the excellence in academic performance was viewed in terms of scores alone irrespective of the basic potential.

An under achiever is one whose academic performance falls below the normative range in his potential by under achievement we refer to that level of attainment, which does not measure up to the potential capabilities of the individual. There is a huge concern among the Heads of the institutions, teachers and parents that the academic achievement is deteriorating now-a-days. Academic achievement is defined as successful completion, through effort, of the acquisition of

academic content and skills. Achievement is defined as measurable behaviour in a standardized series of tests. The tests are usually constructed and standardized to measure proficiency in school subjects. The most highly valued method of determining whether a successful completion has taken place for a learner is quantitative in nature.

Need and Significance of the Study

Self-regulated learning (SLR) is recognized as an important predictor of student academic achievement and self-regulated learning emphasizes autonomy and control by the individual who monitors, directs and regulates actions toward goals, information acquisition, expanding expertise and self-improvement. Self-regulated learners are successful because they control their learning environment. They exert this control by directing and regulating their own actions towards their learning goals. The present investigation is to find out the self-regulated learning of secondary school students in mathematics and also find out whether there is any significant relationship between the self-regulated learning and academic achievement of secondary school students in learning mathematics. Hence, the investigator plans to study under this topic.

Objectives of the Study

- To study the level of Self-Regulated Learning of Secondary School Students in Learning Mathematics with respect to Gender.
- To study the level of Academic Achievement of Secondary School Students in Learning Mathematics with respect to Gender.
- To find the significant difference in Self-Regulated Learning of Secondary School Students in Learning Mathematics with respect to Gender.
- To find the significant difference in Academic Achievement of Secondary School Students in Learning Mathematics with respect to Gender.
- To find the significant relationship between Self-Regulated Learning and Academic Achievement of Secondary School Students in Learning Mathematics.

Hypotheses of the Study

- The level of Self-Regulated Learning of Secondary School Students in Learning Mathematics with respect to Gender is average.
- The level of Academic Achievement of Secondary School Students in Learning Mathematics with respect to Gender is average.
- There is no significant difference between the Self-Regulated Learning of Secondary School Students in Learning Mathematics with respect to Gender.
- There is no significant difference between the Academic Achievement of Secondary School Students in Learning Mathematics with respect to Gender.

- There is no significant relationship between Self-Regulated Learning and Academic Achievement of Secondary School Students in Learning Mathematics.

Method used for the Present Study

Descriptive survey method was used in order to fulfill the objectives.

Population and Sample

A sample of 250 students from 11 Secondary Schools of Kanyakumari District was selected by using simple random sampling technique.

Tools used

The following tools are used for the present study

- Self-Regulated Learning scale developed and standardized by Mrs. Ajitha Kumari was used to study the self-regulated learning of secondary school students.
- The marks obtained by the students in Term II Mathematics Examination were used as an indicator of academic achievement.

Analysis of Data

$H_0$1: Level of Self-Regulated Learning of Secondary School Students in Learning Mathematics with regard to Gender

Table-1

Level of Self-Regulated Learning of Secondary School Students in Learning Mathematics with regard to Gender

Gender	Low		Average		High	
	N	%	N	%	N	%
Male	29	26.61	66	60.55	14	12.84
Female	27	19.15	109	77.30	5	3.55

Table-1 reveals that 26.61% Male and 19.15% Female Secondary School Students have low level, 60.55% Male and 77.30% Female Secondary School Students have average level and 12.84% Male and 3.55% Female Secondary School Students have high level of Self-Regulated Learning with respect to Gender. Hence the level of Self-Regulated Learning of Secondary School Students in Learning Mathematics with regard to Gender is Average.

$H_0$2: Level of Academic Achievement of Secondary School Students in Learning Mathematics with regard to Gender

Table-2

Level of Academic Achievement of Secondary School Students in Learning Mathematics with regard to Gender

Gender	Low		Average		High	
	N	%	N	%	N	%
Male	28	25.69	67	61.47	14	12.84
Female	17	12.06	97	68.79	27	19.15

Table-2 reveals that 25.69% Male and 12.06% Female Secondary School Students have low level, 61.47% Male and 68.79% Female Secondary School Students have average level and 12.84% Male and 19.15% Female Secondary School Students have high level of Academic Achievement with respect to Gender. Hence the level of Academic Achievement of Secondary School Students in Learning Mathematics with regard to Gender is Average.

$H_0$3: There is no significant difference between the Self-Regulated Learning of Secondary School Students in Learning Mathematics with respect to Gender.

Table-3

t – Value of Self-Regulated Learning of Secondary School Students in Learning Mathematics with respect to Gender

Gender	N	Mean	Std. Deviation	't' - value	Remarks at 5% level
Male	109	81.65	9.408	0.515	NS
Female	141	81.05	8.967		

(The table value of 't' at 5% level of significance is 0.953)

Table-3 reveals that the calculated value of 't' is greater than the value at 5% level of significance. Hence there is no significant difference between the self-regulated learning of secondary school students in learning mathematics with respect to Gender.

$H_0$4: There is no significant difference between the Academic Achievement of Secondary School Students in Learning Mathematics with respect to Gender.

Table- 4

t – Value of Academic Achievement of Secondary School Students in Learning Mathematics with respect to Gender

Gender	N	Mean	Std. Deviation	't' - value	Remarks at 5% level
Male	109	66.16	14.841	3.401	NS
Female	141	72.36	13.877		

(The table value of 't' at 5% level of significance is 0.368)

Table-4 reveals that the calculated value of 't' is greater than the value at 5% level of significance. Hence there is no significant difference between the Academic Achievement of Secondary School Students in Learning Mathematics with respect to Gender.

$H_0$5: There is no significant relationship between Self-Regulated Learning and Academic Achievement of Secondary School Students in Learning Mathematics.

Table - 5

Significance of Correlation between Self-Regulated Learning and Academic Achievement of Secondary School Students in Learning Mathematics

Variables	N	Calculated 'r' value	Remarks at 5% level
Self-Regulated Learning	250	0.142	S
Academic Achievement	250		

(The table value of 'F' at 5% level of significance is 0.025)

`Table-5 reveals that the calculated value of 'F' is less than the value at 5% level of significance. Hence there is significant relationship between the Self-Regulated Learning and Academic Achievement of Secondary School Students in Learning Mathematics.

Findings and Interpretations

- The level of Self-Regulated Learning and Academic Achievement of Secondary School Students in Learning Mathematics with regard to Gender is Average. This may be due to the fact that most of the students in the secondary level are not highly motivated towards Self-Regulated Learning. The students are not given more importance to Self-Regulated Learning to increase the level of Academic Achievement.

- There is no significant difference between the Self-Regulated Learning and Academic Achievement of Secondary School Students in Learning Mathematics with respect to Gender. From the earlier studies we found that there is a significant difference exists between males and females. But in the present study no significant difference is revealed between the males and females in their Self-Regulated Learning and Academic Achievement in Learning Mathematics.
- There is an indifferent or negligible correlation between Self-Regulated Learning and the Academic Achievement of Secondary School Students in Learning Mathematics. This may be due to the fact that student perceptions of academic tasks are filtered through a system of self-structures composed of self-beliefs, self-goals and self-evaluations. When a student is aware of self as agent, a sense of self-efficacy, internalized goals for learning and an experience of competency are produced. This leads to the Academic Achievement of the student.

Educational Implications

The findings reported in this study justify the importance of self-regulated learning to academic performance. The findings have implications for the teachers of mathematics that they should try as much as they could motivate their students during the course of instruction.

Conclusion

The significant difference between high achiever students in comparison with the low and average academic achievement emphasizes the importance of self-regulated learning strategies in the process of learning. The child who is trained to think himself not only finds himself as a better acquirer of knowledge but also as a better user and producer of new knowledge. Therefore, the teacher should be very careful in selecting and giving the teaching learning process. His success as a teacher depends upon the suitability of learning process, which he selects to give to the students.

Reference

Archana, K. & Chamundeshwari (2015), Parental Involvement, Self-Learning and Academic Achievement of Students. *EPRA International Journal of Economic and Business Review*, 3(2), 153-160.

Arul Lawrence, A. S. and Vimala, A. (2012). School Environment and Academic Achievement of Standard IX Students. *Journal of Educational and Instructional Studies in The World*, 2(3), Article 22.

Banarjee, P. and Kumar, K. (2014). Self-Regulated Learning and Academic Achievement among the Science Graduate Students. 1(6), 329-342.

Brajesh. K.S., Subramaniam. B & Narayana. K.B., (2006). Relationship between Self-concept, Achievement Motivation and Achievement in Mathematics - A Gender comparison, *Edutracks*, 23(22).

Vijayalakshmi, A & Nirmala, J. M. (2014). Need for achievement of X class students in relation to achievement in mathematics. *Journal of Educational Research and Extension*, 51(3), 64 -71.