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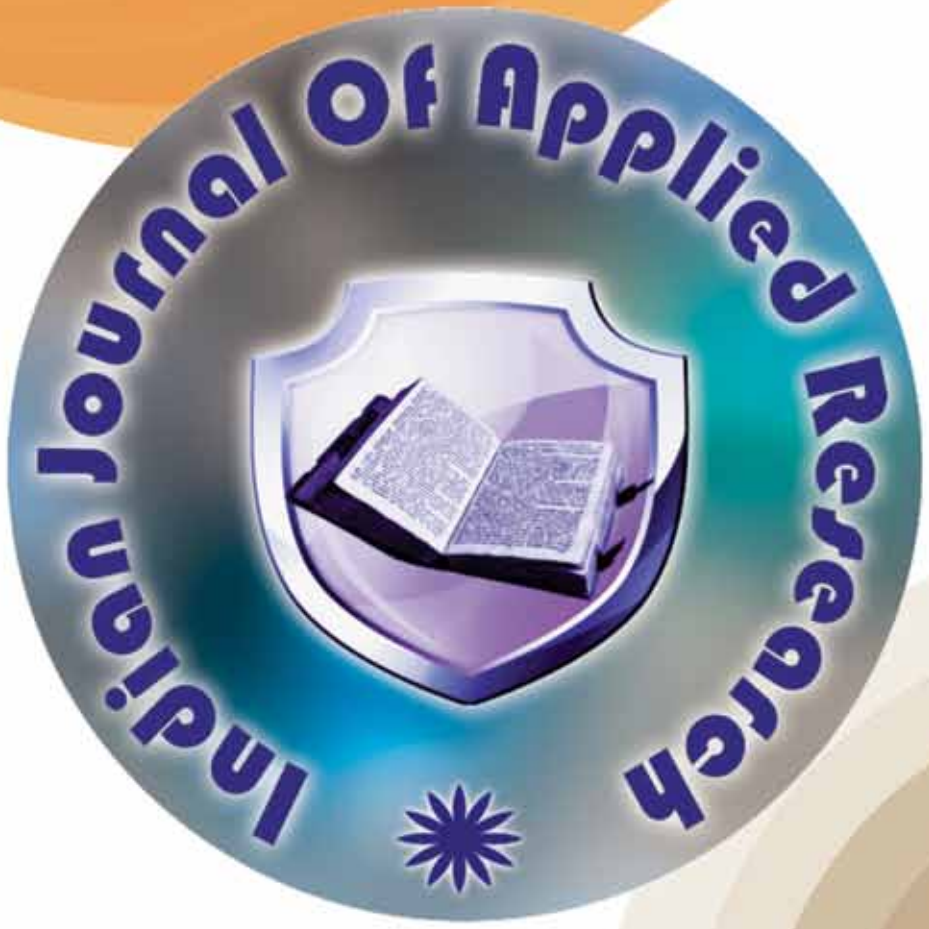

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Research Paper Education

A Study On Achievement In Mathematics of IXth Standard Students in Relation to Locus of Control and Test Anxiety

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ABSTRACT

Mathematics is one of the important cultural components of every modern society. Its influence on the cultural elements has been as fundamental and widespread as to the warrant this statement that is most modern ways of life would hardly have been possible without mathematics. Educational objectives are determined by the needs of the learners, the demands of the society and the psychology of learning. These objectives of the physical, social and emotional qualities in the student are assessed through achievement in mathematics. The achievement in mathematics is much influenced by locus of control and test anxiety towards the development of the child must be positive. The study conclude that, there is a significant relationship between achievement in mathematics & Locus of control, test anxiety among IX standard students. Thus the teachers need to understand the difficulties facing by the children and try do care full plan for overcome those obstacles facing by the children.

Keywords : Achievement in mathematics, Locus of control, Test anxiety

INTRODUCTION:

Mathematics, rightly viewed possess not truth, but supreme beauty a beauty cold and austere like that of sculpture without appeal to any part of our weaker nature without the gorgeous trappings of painting or music, yet sublimely pure and capable of stern perfection such as only the greatest art can exaltation, the sense of being more that man, which is the touchtone of highest excellence is to be found in mathematics as surely as in poetry. Which is best in mathematics deserves not only to be learnt in a list, but to be assimilated as a part of daily thought again and again before the mind with every encouragement. Real life is to most men, a long second best, a perceptual compromise between the ideal and the possible, but the world of pure reason knows no compromise, no practical limitations and no barrier to creative activity, embodying in a splendid edifice the passionate, aspirations after the perfect from which all great work springs. Remote from the human passions, remote even from the pitiful facts of the nature, the generations have gradually created an ordered cosmos where pure thought can dwell in its natural home and where one at least of out nobler impulses can escape from the dreary exile of the actual world.

Mathematics is an intellectual activity of the highest order, no one can deny any piece of reasoning, which doesn't provide sufficient "kick" to the human mind hardly deserves to called mathematics. According to great German mathematician of the 20th century David Hilbert "Mathematics is what competent people understand the world to mean".

Wilder defined as "Mathematics is one of the important cultural components of every modern society. Its influence on the cultural elements has been as fundamental and widespread as to the warrant this statement that is most modern ways of life would hardly have been possible without mathematics."

Keeping in view of the importance of mathematics in mans day-to-day activities and its role in trade and commerce; it has been as compulsory core subject at the secondary school level in the state of Karnataka. But the pupils at large and even the parents consider the subject as a difficult subject. There may be many reasons like school climate, teacher-pupil relation, teaching strategies adopted, curriculum, testing processes etc. There many are even a few social and psychological factors, which influence on learning of mathematics. They are like motivation, attitude, aptitude, interest, self-concept, intelligence, creativity, anxiety, etc.

During the process of the education of the child, he has to be continually appraised with regard to the level of his intelligence, attainment, aptitude and educational objectives are determined by the needs of the learners, the demands of the society and the psychology of learning. Therefore, these objectives of the physical, social and emotional qualities in the student are assessed through achievement in mathematics. So the achievement in mathematics of child is very important in the process of education. Therefore, the development of ability in achievement in mathematics is one of the major objectives of mathematics. The major role of education is to develop efficient achievement in mathematics among learner. According to Doughlas "achievement in mathematics is a help the social groups and individual to gain to a variety of experiences in and acquire a basic understand of mathematics and its associated problems". Achievement in mathematics is much influence by locus of control and test anxiety towards the development of the child must be positive. Mehta defined the locus of control as" the type of attribution we make for our success or failures in school task" and Sharma defined the Test anxiety as "a mental state of worry, concern and uncertainly due to the encountering of situation of test examinations oral or written, which act as a source of anxiety to the individual". The recent studies show that, Marshall and Wanda (2006): Conducted a study on the impact of locus on the academic achievement. The purpose of the study was to determine if the locus of control orientation of middle school areas of mathematics and reading as measured by the metropolitan achievement test and the final grades for mathematics and reading. The sample was comprised of African American males from two suburban

using the t-test. There is no significant difference between the MAT7 mathematics test scores of internally and externally oriented African American male 8th grade students. There is so significant difference between the MAT 7 reading test scores of internally and externally is no significant difference in the final mathematics grades of internally and externally oriented African male 8th grade students. Mullins and Anita (2004): Conducted a study on the differential models for mathematics anxiety in male and female college students. The relative importances of several predictors of mathematics anxiety were examined in multiple regression models. Dejun and Guo (2004): Conducted a study on the relationship between trait test anxiety, test self-efficiency, and mathematics term-end scores in the structural equation modeling according to Baron's criterion of confirming the mediator variables. The results showed that test anxiety influenced teat performance by the mediator of test self-efficiency. Test self-efficiency influenced test performance directly and was the mediator of test anxiety influencing test performance. Maria.Elena (2004): Conducted an Investigation on the effects of self concept perception of parents' expectancies & locus of control on mathematics. The results of the study indicate that prior achievement in mathematics is a strong predictor of mathematics course enrollment in high school. The other independent variables were only weakly correlated with the dependent variable. This finding implies that middle school administrators and mathematics teachers should consider proving more eighth-graders with the opportunity to study algebra. Sud. Shonate & Sagar (1996):- Conducted an experiment on evaluation of a brief counseling strategy of test anxiety ego stress and attentional skills training on arithmetic reasoning. The result shows that there was a non-significant difference between high anxious controls, low anxious stress sample. Attentional skills training significantly improved performance on the arithmetic test of the high test anxious males and females under go stress conditions. Sanghvis Chitrangi (1995): Conducted a study on efficacy of study skills training in mathematics in managing study habits and test anxiety of high test anxious students. Sanchez, (1994): Conducted a research on influence of achievement motivation and prior mathematics achievement on locus of control and mathematics performance as impacted through written instructions. The present study examined the influence of need for achievement and prior mathematics achievement on locus of control and mathematics performance and the impact of need for achievement and prior mathematics test performance. Gunter (1991): Conducted a study on the competence and test anxiety in the students. The hypothesis that domain-specific self-related cognitions are predictors of test anxiety in students is tested by longitudinal data/at the beginning and at the end of a school year the following variables were measured twice in a sample of 346 secondary school students. Goetz fried, Leslie, Hannifin and Michael (1985):- Conducted a study on the effect of the locus of CAI control strategies on the learning of mathematics rules. Result show that below that below-average achieving demonstrated better rule recall and proportionately greater application scores that low-achieving across strategies. The liner control strategy, however required less time to complete and resulted in more efficient learning. Schllohorn and Marry (1982):- Conducted a study to find about the effect of a cognitive style mapping on achievement of community college students with internal locus of control and locus and external locus of control. Keeping into consideration the above mentioned needs the present study was conducted with the following objectives:

1. To study relationship between test anxiety and achievement in mathematics among the IX standard students.
2. To study relationship between locus of control and achievement mathematics among the IX standard students.
3. To find out gender difference achievement in mathematics in related to Locus of control among the IX standard students.
4. To find out gender difference achievement in mathematics in related to test anxiety among IX standard students.

HYPOTHESES:

1. There is no significant relationship between achievement in mathematics and locus of control of IX standard students.
2. There is no significant relationship between achievement in mathematics and test anxiety of IX standard students.
3. There is no significant difference in achievement in mathematics among Boys and Girls of IX standard.
4. There is no significant difference in achievement in mathematics between Government and Aided Schools.
5. There is no significant difference in achievement in mathematics between Government and Unaided Schools.
6. There is no significant difference in achievement in mathematics between Aided and Unaided Schools.
7. There is no significant difference in achievement in mathematics among IX standard students belong to low and moderate locus of control group.
8. There is no significant difference in achievement in mathematics among IX standard students belong to low and high locus of control group.
9. There is no significant difference in achievement in mathematics among IX standard students belong to moderate and high locus of control group.
10. There is no significant difference in achievement in mathematics among IX standard students belong to low and moderate test anxiety group.
11. There is no significant difference in achievement in mathematics among IX standard students belong to low and high test anxiety group.
12. There is no significant difference in achievement in mathematics among IX standard students belong to moderate and high test anxiety group.

METHODOLOGY:

The investigator has used survey method for studying the problem.

SAMPLE:-

The population of the present study consists of all who are studying in IX standard students in Bangalore from this population sample were selected. After receiving the latest statistics in the Karnataka Secondary Examination Board a simple stratified random sampling techniques was used to draw the sample of 150 IX standard students. The sample includes 109 boys and 41 girls from the Bangalore city.

TOOLS USED:-

In the present study, the following tools were used.

- The average of first semester and second semester scores examination marks were considered as achievement in mathematics scores.
- Locus control Scale developed by Praveen
- Test anxiety Scale developed by Sharma.

PROCEDURE:

The tool was administered on the sample of 150 secondary school students drawn from government, government aided, private unaided types of schools, the test was administered by giving the instructions to the respondents and sheets were collected, scored and interpreted.

STASTICAL TECHNIQUE USED:

Analysis and interpretation has been done by the using statistical techniques such as co-efficient of correlation of Pearson's product moment method was used. Mean and standard deviation were calculates for each group. Each hypothesis was testes for its significance using appropriate test.

Analysis & interpretation of DATA:

Table-1

The table showing the Number(N), 'r' value and its level of significance of achievement in Mathematics, Locus of control and Test anxiety.

Variables	N	df	r-value	Level of Significance
Achievement in mathematics	150	148	0.210**	0.01
Locus of control				
Achievement in mathematics	150	148	-0.596**	0.01
Test anxiety				

It is observed from the above table that that a positive relationship is found between achievement in mathematics and locus of control. The value is tested for its significant using r. The r-value 0.210 is found to be significant at 0.01 level of significance. It is positively low correlation. Therefore the null hypothesis is rejected. Hence it is inferred that there is a significant relationship between achievement in mathematics and locus of control among XI standard students. Thus it is concluded that achievement in mathematics and locus of control are positively related. In the Achievement in mathematics and test anxiety, the value is tested for its significance using r. The r-value 0.596 is found to be significant at 0.01 level of significance. It is negatively low correlation. Therefore the null hypothesis is rejected. Hence it is inferred that there is a significant relationship between achievement in mathematics and test anxiety among IX standard students. Thus it is concluded that achievement in mathematics and test anxiety are negatively related.

Table -2
Table showing the Number (N), Mean, Slandered deviation (S.D),'t' value and its levels of significance of Locus of control, Text anxiety & its facets.

		Number	Mean	SD	t-value	Sign.
Gender	Boys	109	30.54	6.89	1.66	NS
	Girls	41	32.61	6.56		
Type of Institution	Government	15	32.16	6.33	0.32	NS
	Aided	77	32.46	5.55		
	Government	15	32.16	6.33	0.32	NS
	Unaided	58	31.77	7.45		
	Aided	77	32.46	5.55	0.39	NS
	Unaided	58	31.77	7.45		
Locus of control	Low	40	32.05	6.43	1.54	NS
	Moderate	76	30.14	6.37		
	Low	40	32.05	6.43	3.01**	0.01
	High	34	36.29	5.77		
	Moderate	76	30.14	6.37	5.04**	0.01
	High	34	36.29	5.77		
Test anxiety	Low	49	36.51	4.87	5.39**	0.01
	Moderate	66	31.28	5.63		
	Low	49	36.51	4.87	6.87**	0.01
	High	35	27.23	6.89		
	Moderate	66	31.28	5.63	3.00**	0.01
	High	35	27.23	6.89		

It is observed from the above table that the mean difference between achievement in mathematics scores of boys and girls is found to be 1.93. The value is tested for its significance using t. The t-value 1.66 is found to not significant at 0.05 level of significance. Hence it is inferred that there is no significant difference between boys and girls among IX standard students.

It is observed that the mean difference between achievement in mathematics scores of studying Government and Aided Schools is found to be 0.3. The value is tested for its significance using t. The t-value 0.32 is found to not significant at 0.01 level of significance. Therefore the null hypothesis is accepted. Hence it is inferred that there is no significant difference between achievement in mathematics scores of IX standard students studying in Government and Aided Schools.

It is observed that the mean difference between achievement in Mathematics scores of studying Government and Unaided Schools is found to be 0.39. The value is tested for its significance using t. The t-value 0.32 is found to not significant at 0.05 level of significance. Therefore the null hypothesis is accepted. Hence it is inferred that there is no significant difference between achievement in mathematics scores of IX standard students studying in Government and Unaided Schools.

It is observed that the mean difference between achievement in mathematics scores of studying Aided and Unaided Schools is found to be 0.69. The value is tested for its significance using t. The t-value 0.39 is found to not significant at 0.01 level of significance. Therefore the null hypothesis is accepted. Hence it is inferred that there is no significant difference between achievement in mathematics scores of IX standard students studying in Aided and Unaided Schools.

It is observed that the mean difference between achievement in mathematics scores of students with low and moderate locus of control is found to be 1.91. The value is tested for its significance using t. The t-value 1.54 is found to not significant at 0.01 level of significance. Therefore the null hypothesis is accepted. Hence it is inferred that there is no significant difference between achievement in mathematics scores of IX standard belonging to low and moderate locus of control.

It is observed that the mean difference between achievement in mathematics scores of students with low and high locus of control is found to be 4.24. The value is tested for its significance using t. The t-value 3.01 is found to not significant at 0.01 level of significance. Therefore the null hypothesis is rejected. Hence it is inferred that there is a significant difference between achievement in mathematics scores of IX standard belonging to low and high locus of control. The mean difference of 4.24 is in favour achievement in mathematics of students with high locus of control. Therefore the students possessing high locus of control have better achievement in mathematics than the students possessing low locus of control.

It is observed that the mean difference between achievement in mathematics scores of students with moderate and high locus of control is found to be 6.15. The value is tested for its significance using t. The t-value 5.04 is found to not significant at 0.01 level of significance. Therefore the null hypothesis is rejected. Hence it is inferred that there is a significant difference between achievement in mathematics scores of IX standard belonging to moderate and high locus of control. The mean difference of 6.15 is in favour of students with high locus of control. Therefore the students possessing high locus of control have better achievement in mathematics than the students possessing moderate locus of control.

It is observed that the mean difference between achievement in mathematics scores of students with low and moderate test anxiety is found to be 5.23. The value is tested for its significance using t. The t-value 5.39 is found to not significant at 0.01 level of significance. Therefore the null hypothesis is rejected. Hence it is inferred that there is a significant difference between achievement in mathematics scores of IX standard belonging to low and moderate test anxiety. The mean difference of 5.23 is in favor of students with low test anxiety. Therefore the students possessing low test anxiety have better achievement in mathematics than the students possessing moderate test anxiety.

It is observed that the mean difference between achievement in mathematics scores of students with low and high test anxiety is found to be 9.28. The value is tested for its significance using t. The t-value 6.87 is found to not significant at 0.01 level of significance. Therefore the null hypothesis is reject-

ed. Hence it is inferred that there is a significant difference between achievement in mathematics scores of IX standard belonging to low and high test anxiety. The mean difference of 9.28 is in favour of students with low test anxiety. Therefore the students possessing low test anxiety have better achievement in mathematics than the students possessing high test anxiety.

It is observed that the mean difference between achievement in mathematics scores of students with moderate and high test anxiety is found to be 4.05. The value is tested for its significance using t. The t-value 3.00 is found to not significant at 0.01 level of significance. Therefore the null hypothesis is rejected. Hence it is inferred that there is a significant difference between achievement in mathematics scores of IX standard belonging to moderate and high test anxiety. The mean difference of 4.05 is in favour of students with moderate test anxiety. Therefore the students possessing moderate test anxiety have better achievement in mathematics than the students possessing high test anxiety.

Major findings of the study:-

Based on the analysis of the data the researcher recorded the following major finding of the study.

1. There is a significant relationship between achievement in mathematics & Locus of control
(r-0.210) among IX standard students.
2. There is a significant relationship between achievement in mathematics and test anxiety
(r--0.596) among IX standard students.
3. There is no significant difference in achievement in mathematics between boys and girls (t-1.66) of IX standard students.
4. There is no significant difference in achievement in mathematics of IX standard students studying Government and Aided Schools (t-0.32).
5. There is no significant difference in achievement in mathematics of IX standard students studying Government and Unaided Schools (t-0.32).
6. There is no significant difference in achievement in mathematics of IX standard students studying Aided and Unaided Schools (t-0.39).
7. There is no significant difference in achievement in mathematics of IX standard students belonging to low and moderate locus of control (t-1.54).
8. There is a significant difference in achievement in mathematics of IX standard students belonging to low and high locus of control (t-3.01).
9. There is a significant difference in achievement in mathematics of IX standard students belonging to moderate and high locus of control (t-5.04).
10. There is a significant difference in achievement in mathematics of IX standard students belonging to low and moderate test anxiety (t-5.39).
11. There is a significant difference in achievement in mathematics of IX standard students belonging to low and high test anxiety (t-6.87).
12. There is a significant difference in achievement in mathematics of IX standard students belonging to moderate and high test anxiety (t-3.00).

CONCLUTION:

Achievement in mathematics is necessary for the students to help them in good achievement. Practice leads to perfection. It requires sufficient and sustained practice overtime to be a champion. Invest time and patience to develop good environmental awareness. Parent involvement continues being positive and powerful source of influence for achievement of adolescents and young adults. By encouraging parents to be involved in development, schools can maximize benefits for the students by giving important for their effort not to leave children behind.

From the data it is observed that locus of control is a factor which contributes much too achievement in mathematics among students. However perceive the cause of life events, be the positive or negative as a lot to with our capacity to succeed on a personal, professional and social level. Someone with an achievement motivation would generally perceive himself as responsible for the outcome while a person with an external locus of control would most offend blame fate; destiny, luck, society or some other force beyond is control. Therefore, it is necessary for the teachers in the class room to make use of good teaching modules. Available the best methods for improving performance in the academics. This helps the student to have positive outlook towards the life.

Locus of control is a concept that as a significant effect on our daily lives. Those with external locus of control believes that their actions do not influence out comes. This makes individually less likely to work to reach their full potential do to motivational, emotional and cognitive deficits it creates. In fact people with external locus of control or more likely to suffer from depressions their ailments because they believe their actions cannot improve their correct position.

Those with internal locus of control see the world through a more adoptive prospective. They believe that hard work and personal abilities while lead to positive outcomes. This makes them more likely to meet challenges and succeed in their Endeavour's. Even though one's actions may not have anything to do with an outcome, the belief that their do can greatly aid one's psychologically well being. Therefore, those who attribute a sense of personal responsibility. For their future thoughts more adopt to living in social world. The higher level of mathematical creativity of the students were related to higher levels in achievement in mathematics justify the students of higher levels in mathematics creativity for the scientific stream since it comprises of major components of mathematics. Hence, selection o scientific stream should be based on standardized mathematical creativity tests to ensure the satisfactory performance in mathematics in scientific stream.

School teachers have to be trained in the new sprit. It is not only necessary to teach the new concepts that are being introduced in school. Now it is much necessary to give them the sprit behind the new changes. It is a big problem changing fined attitudes of mind is more difficult than teaching a few additional topics. Hard thinking and careful planning is required on the part of the teachers.

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