CHAPTER II

REVIEW OF RELATED STUDIES
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CHAPTER II
REVIEW OF RELATED STUDIES

2.1 INTRODUCTION

Study of the related literature implies locating, reading and evaluating reports of results as well as reports of casual observation and opinion that are related to the individual's planned research project.

2.2 IMPORTANCE OF REVIEW OF RELATED STUDIES

1. A review of the related literature gives the scholar an understanding of the previous work that has been done.

2. It enables us to know the means of getting to the frontiers in the field of our problem. Until we have learnt what others have done and what still remains to be done in our area, we cannot develop a research project that will contribute to furthering knowledge in our field.

3. A review of the related literature would develop the insight of the investigator. The information thus, gained will save the researcher much time.

4. The importance of the review is quite obvious in delimiting the research problem and in defining it better.

5. The review of the literature provides us with an opportunity of gaining insight into the methods, measures, subjects and approaches employed by other research workers. This in turn will lead to significant improvement of our research design.

6. A careful consideration of the chapters entitled 'recommendations for further research' in various research studies guides us regarding the stability of a problem and in assisting us delimiting our research problems.


Hence the review of related literature is a powerful instrument in the hands of an investigator for the successful completion of her research.

The collectual information have been given under the following heads.

1. Indian studies in detail
2. Indian studies in tabular form.
3. Facts deduced from Indian studies.
4. Findings from Indian studies.
5. Studies Abroad in detail.
6. Studies Abroad in tabular form.
7. Facts deduced from studies Abroad.
8. Major findings from studies Abroad.

2.3 **INDIAN STUDIES IN DETAIL:**

Study No 1

Name of the investigator:


Title of the study:

An investigation into the mathematical ability of pupils of classes IX and X in the context of some cognitive and affective variables.

Objectives:

1. To study mathematical ability grade-wise, sex wise and area wise.
2. To study mathematical ability in the context of some cognitive variables, viz. syllogistic reasoning and space visualization.
3. To study mathematical ability in the context of some affective variables, viz. attitude towards mathematics and anxiety for mathematics.

Sample:

1250 students of standard IX and 1035 students of standard X.

Major variables used:

Ability in mathematics, reasoning ability, locality of the school and attitude towards mathematics.

Tools:

Space visualization test (SVT), Syllogistic reasoning test in mathematics (SRTM), Mathematical attitude scale (MATS) and Mathematical anxiety scale (MANS).

Statistical Procedures:

Percentiles, t-scores and product moment correlation.

Findings:

There were no significant sex differences with regard to mathematical ability of pupils of classes IX and X.

There was a significant difference between mean scores of pupils of urban and rural areas.

The pupils possessing high reasoning ability were found to be better in mathematical ability than those with low reasoning ability.
The pupils having good space visualization were found better in mathematical ability than the pupils having poor space visualization.

The pupils possessing a favourable attitude towards mathematics were found better in mathematical ability than those with a less favourable attitude.

The pupils possessing high anxiety were inferior in mathematical ability to pupils having low anxiety.

The pupils of class IX having favourable attitudes were found superior to pupils of class X possessing unfavourable attitudes; hence the interaction effect between grade and attitude was significant and the rest of the interactions were not significant.

Study No 2


Title of the study: Study of academic achievement of students in mathematics in relation to their intelligence, achievement motivation and socio-economic status.

Objectives:

To study the impact of intelligence at various levels on the achievement of students in mathematics.

To analyse the effect of different levels of achievement motivation on the achievement of students in mathematics.

To study the intersectional effects of variables of intelligence, achievement motivation and socio-economic status on the achievement of students in mathematics.

Sample:

435 students (boys and girls) of grade V.

Major Variables:

Achievement in mathematics, intelligence and achievement motivation.

Tools:

The Raven's standard progressive matrices for intelligence and the Aronzon' graphic expression test for measuring achievement motivation.

Statistical procedure:

Three-way (3x3x3) analysis of variance.
Findings:

Intelligence affected the achievement of students in mathematics significantly at all the three levels, i.e., high, average and low. There was superiority of the high intelligent group of students over the average and low intelligent groups of students in their achievement in mathematics. Further, the average intelligence group were better achievers in mathematics than the low intelligence group.

In neutral classroom conditions, the achievement of students in mathematics was not affected by their achievement motivation.

The double and triple interaction effects between the variables of intelligence, achievement motivation and socio-economic status were not significant.

Study No 3

Name of the investigator:
SINGH, R., 1986.

Title of the study:
An investigation into the relationship between achievement motivation, intelligence (general mental efficiency), introversion-extroversion, achievement in mathematics and a comparison thereof between Haryana and Delhi students belonging to various socio-cultural strata.

Objectives:
To find out whether there was any relationship between achievement motivation and intellectual efficiency and mathematics achievement.
To find out whether there was any difference in achievement among the students belonging to high and low achievement motivation groups.

Sample:
184 students from schools in South Delhi and the same number from Haryana schools.

Major Variables:
Mathematics achievement, intelligence and achievement motivation.

Tools:
B.N. Mukherjee's sentence completion test (SCT) to secure measure of achievement motivation, Raven's progressive matrices test to provide a global measure of intelligence and Objective based achievement test in mathematics constructed by the investigator.
Statistical procedure:

Product moment correlation coefficient, t-test, multiple regression analysis an
analysis of covariance.

Findings:

Correlation between n-ach scores and intellectual efficiency and mathematic
achievement were found significant.

The difference in mathematics achievement was significant for low and high
groups on n-ach in case of Delhi schools but in case of Haryana schools it was no
significant.

Study No 4

Name of the investigator:

TRIPATHI, R.C., 1986.

Title of the study:

Achievement motivation and its correlates of high school students of East U.P.

Objectives:

To compare the scores of boys and girls on intelligence.

To study the relationship between achievement motivation and intelligence and
academic attainment on the basis of the scores of boys and girls separately.

To determine the amount of effect of intelligence and academic attainment on
achievement motivation scores of boys and girls separately.

Sample:

500 high school students (300 boys and 200 girls) of East U.P.

Major variables:

Intelligence, achievement motivation, academic achievement, sex and socio-
economic status.

Tools:

The test of general mental ability by Joshi, Achievement values and anxiety
inventory (Mehta Prayag) and Vyaktitva Parakh Prashnavali (Saxena).

Statistical procedure:

The mean, percentiles, product moment and multiple correlation and critical
ratio.
Findings:

The average level of achievement motivation of boys and girls was found to be low.

Girls showed better average scores in intelligence.

Urban girls secured better scores on the intelligence test.

The boy’s scores in achievement motivation appeared to be significantly related with intelligence.

It was found that achievement motivation of boys and girls was highly correlated with intelligence and achievement.

Study No 5

Name of the investigator:

MEHROTRA, S., 1986.

Title of the study:

A study of the relationship between intelligence, socio-economic status, anxiety, personality adjustment and academic achievement of high school students.

Objectives:

The investigation was designed to study the relationship between intelligence, socio-economic status of the family, personality adjustment, anxiety and academic achievement of high school students.

Sample:

535 class X students (260 boys and 275 girls).

Major variables:

Academic achievement, intelligence, socio-economic status, anxiety and personality adjustment.

Tools:

Jalota’s group general mental ability test, Saxena’s Adjustment inventory and Kumar’s Indian adaptation of Sarason’s general anxiety scale.

Statistical procedure:

Correlation

Findings:

Both for the boys and girls there was an inverse relationship between level of anxiety and academic achievement.
There was a positive relationship between intelligence and academic achievement.

In general, the girls had a comparatively higher level of anxiety than the boys.

Study No 6

Name of the investigator:

Title of the study:
A study of achievement motivation in relation to sex, intelligence and socio-economic status.

To study the achievement motivation differences, if any, between boys and girls when both belong to some socio-economic status and are of same intelligence.

To study the influence of intelligence on achievement motivation, keeping the influence of sex and socio-economic status constant.

Sample:
500 students (250 boys and 250 girls) of tenth grade from ten high schools of Himachal Pradesh were sampled randomly.

Major variables:
Achievement motivation, intelligence, sex and socio-economic status.

Tools:
Achievement motivation test (TAT) of McChelland, general mental ability test (Hindi version by S.Jalota) and socio-economic status scale questionnaire by S.D. Kapoor.

Statistical procedure:
ANOVA in 2 x 3 x 3 factorial design and chi-square.

Findings:
Girls do not differ from boys in the level of achievement motivation when both come from same socio-economic background and posses same intelligence.

At the same socio-economic status, the students from different intelligence levels do not differ in achievement motivation.
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<th>Name</th>
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<th>Findings</th>
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</thead>
<tbody>
<tr>
<td>P.C.</td>
<td>1974</td>
<td>A study of the correlates of Achievement Motivation.</td>
<td>high and higher secondary students (500 male and 500 female)</td>
<td>Achievement motivation and sex</td>
<td>Correlation</td>
<td>The achievement Motivation Test</td>
<td>girls had higher achievement motivation than boys.</td>
</tr>
<tr>
<td>J.G.</td>
<td>1973</td>
<td>The attitudes to mathematics of high school students of Saurastra - A Field Study.</td>
<td>3505 pupils</td>
<td>Attitudes towards mathematics significance test, correlation</td>
<td>2</td>
<td>The attitude scale constructed by the investigator following the approach of Thurstone and Chave.</td>
<td>girls in grade X had a more favourable attitude to mathematics than those in grades IX. Boys, in general, did not differ from girls in their attitude to mathematics. Urban children, in general, had more favourable attitude to mathematics than rural children.</td>
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<tr>
<td>Name</td>
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<tr>
<td>N.C.P.</td>
<td>1967</td>
<td>A study of intelligence and some personality factors in relation to academic achievement of school students.</td>
<td>480 male students studying in classes X and matric in schools recognised by Bihar School Examination Board in the towns of Patna and Gaya.</td>
<td>Intelligence, achievement motivation and academic achievement.</td>
<td>t-test correlation</td>
<td>The Næfde's Non-verbal Test of Intelligence (NVTI).</td>
<td>Intelligence and academic achievement were significantly related (beyond 0.01 level). Significant positive relationship between academic achievement and achievement motivation (at 0.01 level). Significant difference in performance between boys and girls, the difference being in favour of boys.</td>
</tr>
<tr>
<td>Uma</td>
<td>1975</td>
<td>Some factors affecting achievement of secondary school pupils in mathematics.</td>
<td>732 pupils of IX.</td>
<td>Interest, performance in mathematics, intelligence and locality</td>
<td>skewness, t-test and correlation</td>
<td>Standardised achievement test in mathematics, An interest inventory and Raven's standard progressive matrices.</td>
<td>Urban pupils were superior to rural pupils in mathematics. Intelligence and interest in mathematics were higher in boys and urban pupils than their respective counterparts. Achievement in mathematics was positively related to intelligence and interest in mathematics. Achievement of first born was better than that of the last born. Achievement of scheduled caste and tribe students was lower than that of the total sample.</td>
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<tr>
<td>1980</td>
<td>A study of stresses in relation to school climate and academic achievement (Age group 13-17)</td>
<td>600 students (300 males and 300 females)</td>
<td>School Climate, sex and academic achievement.</td>
<td>Percentages, simple and multiple regression analysis and F-test.</td>
<td>Six scales were developed and standardized to measure the academic achievement, school climate, institutional stress, academic stress, socio-economic stress and neuroticism.</td>
<td>Significant difference between male students and female students on academic achievement. School climate and academic achievement were correlated negatively for the female sample though it was not significant.</td>
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<td>1978</td>
<td>A study of anxiety and achievement motivation in relation to academic achievement, sex, and economic status</td>
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<tr>
<th>Sample Size (number of boys and girls)</th>
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<td>350 students (160 boys and 190 girls)</td>
<td>Anxiety, achievement motivation</td>
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<th>Correlation between anxiety and academic achievement</th>
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<td>Mathematics, Science, History, and Achievement Tests</td>
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<tr>
<th>Variables</th>
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<tr>
<td>Intelligence, numerical ability, abstract reasoning, and mathematical talent</td>
<td>Correlation between anxiety and academic achievement</td>
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<tr>
<th>Tools</th>
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<tr>
<td>tutors</td>
<td>Anxiety, group had highest achievement motivation but the relationship between anxiety and achievement showed lower level of achievement motivation.</td>
</tr>
<tr>
<td>tutors</td>
<td>Boys showed more achievement motivation than girls, but girls were more achievement motivated than boys.</td>
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<td>tutors</td>
<td>Girls showed significantly more anxiety than boys.</td>
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<td>tutors</td>
<td>In the case of boys, negative anxiety was significantly more than girls.</td>
</tr>
<tr>
<td>tutors</td>
<td>In the case of girls, negative anxiety was significantly more than boys.</td>
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### Mathematical Analysis of the 350 Students

- A psychological analysis of the 350 students.

#### Drafting the Research

- The research was conducted on 350 students, 160 boys, and 190 girls.

#### Analysis

- The analysis included intelligence, numerical ability, abstract reasoning, and mathematical talent.

#### Conclusion

- The study concluded that girls showed more anxiety than boys, and in the case of boys, negative anxiety was significantly more than girls. Girls were more achievement motivated than boys, but boys showed more achievement motivation than girls.
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<th>Finding</th>
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<tbody>
<tr>
<td>Joshi, H.P.</td>
<td>1982</td>
<td>Mental health as a correlate of intelligence, education, academic achievement and socioeconomic status</td>
<td>Male and female</td>
<td>sex, intelligence and academic achievement</td>
<td>General intelligence test (Joshi)</td>
<td>Cultural level questionnaire</td>
<td>Girls scored higher in the intelligence test than boys.</td>
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<td></td>
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<td></td>
<td>Correlation, factorial analysis of variance and analysis of variance.</td>
<td>Cattell’s Culture Fair Intelligence Test (CFIT), Scale 2, form B.</td>
<td>Girls were found to be suffering from a sense of insecurity and anxiety.</td>
</tr>
<tr>
<td>Jee, S.</td>
<td>1978</td>
<td>A study of the relationship among creative thinking, intelligence and school achievement.</td>
<td>400 urban pupils, (200 boys and 200 girls.)</td>
<td>Intelligence, Creativity and mathematics achievement.</td>
<td>Descriptive statistics and product moment coefficient of correlation</td>
<td></td>
<td>No sex difference in intelligence.</td>
</tr>
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<td>Significant sex difference in achievement in mathematics was found in favour of girls.</td>
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<td>frequency.</td>
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<td>Boys were more academically motivated than girls.</td>
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<td>Pupils in rural areas were more academically motivated than those in the urban areas.</td>
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<tr>
<td>Valis, L.</td>
<td>1985</td>
<td>A study of factors affecting achievement motivation.</td>
<td>480 children of 8 to 12 years of age and 170 teachers</td>
<td>Achievement motivation, sex, age, birth order, academic performance and parents' education</td>
<td>t-test, analysis of variance and correlation</td>
<td>Raven's Progressive Matrices</td>
<td>Achievement motivation was affected by birth order. Academic performance was positive and significantly related with achievement motivation. Fathers' education significantly affected achievement motivation while mothers' had no effect on achievement motivation of children. Urban/rural upbringing of children had no effect on achievement motivation. Children of coeducational schools had more achievement motivation than children of boys schools. But, significant influence was recorded for the children of coeducational schools, those of boys school and girls schools.</td>
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<tr>
<td>Author</td>
<td>Year</td>
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<tr>
<td>Dhary,</td>
<td>1971</td>
<td>The relationship between achievement motivation and anxiety intelligence, sex, social class and vocational aspirations.</td>
<td>200 boys and 209 girls of higher secondary schools of Amritsar, Jullundur and Chandigarh.</td>
<td>Achievement motivation, anxiety, intelligence, sex, social status and vocational aspiration.</td>
<td>ANOVA, regression equations And Mann-Whitney test</td>
<td>Mehta’s adapted version of the McClelland’s TAT for n-achievement</td>
<td>Significant relationship between achievement motivation and intelligence for girls and not significant for boys at 0.01 level. Girls had higher achievement motivation.</td>
</tr>
<tr>
<td>L.</td>
<td>1968</td>
<td>A comparative study of emotional stability of mentally superior and average adolescents.</td>
<td>142 urban higher secondary schools of Madhya Pradesh.</td>
<td>Intelligence, emotional stability and SES</td>
<td>t-test</td>
<td>Prayag Mehta’s group test of intelligence</td>
<td>Superior pupils were significantly better adjusted and emotionally more stable. The average group was better adjusted in situations related to the school.</td>
</tr>
<tr>
<td>Adhy</td>
<td>1986</td>
<td>A study of the relationship of manifest anxiety, emotional maturity and social maturity of standard X students to their academic achievement.</td>
<td>574 boys and 531 girls</td>
<td>achievement in mathematics, emotional maturity and social maturity</td>
<td>Zero order correlations, chi-square test, multiple correlation and multiple regression</td>
<td>Sinha’s manifest anxiety scale, emotional maturity scale, Rao’s social maturity scale and Kuppusamy’s SES Scale.</td>
<td>Emotional maturity was positively and significantly related to achievement in mathematics and total academic achievement. Girls were higher achievers in mathematics. Private school students scored higher than government schools.</td>
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<td>Name</td>
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<tr>
<td>S.</td>
<td>1984</td>
<td>Relationship of home environment, need for achievement and academic motivation with academic achievement.</td>
<td>300 class students (201 boys and 99 girls)</td>
<td>academic achievement, academic motivation, need for achievement and home environment.</td>
<td>Inter correlation and analysis of variance</td>
<td>McClelland's Thematic apperception test for need achievement and Academic inventory</td>
<td>Academic ability was significantly positively related to academic motivation.</td>
</tr>
<tr>
<td>i sudha</td>
<td>1982</td>
<td>A study of intelligence, achievement and socio-economic patterns of different sociometric groups of adolescents.</td>
<td>529 school students</td>
<td>Intelligence, achievement and adjustment.</td>
<td>Correlation, analysis of variance</td>
<td>Jalota group intelligence test Mittal Socio-economic status scale</td>
<td>Correlation between intelligence academic achievement was significant</td>
</tr>
<tr>
<td>ri.</td>
<td>1986</td>
<td>A study of achievement motivation of students of std V, VI and VIII in relation to some psycho-socio factors</td>
<td>1100 students</td>
<td>Academic achievement and achievement motivation</td>
<td>ANOVA</td>
<td>J - scale for measuring motivation</td>
<td>Significant relationship existed academic achievement and achievement motivation.</td>
</tr>
<tr>
<td>C.A.</td>
<td>1987</td>
<td>An investigation into the effect of some psychological factors on school achievement of scheduled caste and scheduled tribe students and the students as identified by the Boxi Commission in Saurashtra.</td>
<td></td>
<td>Achievement motivation and academic achievement</td>
<td>2x2x2x3 factorial design, ANOVA</td>
<td>Prayag Mehta's TAT pictures test and Sidhi's attitude scale</td>
<td>Achievement motivation was positively and significantly related with academic achievement.</td>
</tr>
<tr>
<td>Author</td>
<td>Year</td>
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<td>Shankar</td>
<td>1988</td>
<td>A critical study of the effect of mental ability, socio-economic status of students on the achievement of children of std V; A case study of some schools in and around Pune.</td>
<td>500 students from 12 schools</td>
<td>Sex, mental ability and academic achievement</td>
<td>t-test, correlation</td>
<td>Achievement test and Educational environment in the family questionnaire by A.S. Wadkar.</td>
<td>Urban area students were better than rural area in achievement. No significant difference between the achievement of boys and girls.</td>
</tr>
<tr>
<td>U.</td>
<td>1985</td>
<td>School Failure: A casual comparative study of high and low achievers.</td>
<td>80 students from 6 high schools of Darrang district</td>
<td>Intelligence, motivation and achievement</td>
<td>t test and chi square</td>
<td>Achievement test</td>
<td>Low academic achievement significantly related to intelligence. Low academic achievement was significantly related to achievement motivation.</td>
</tr>
<tr>
<td>M.</td>
<td>1986</td>
<td>A critical study of the influence of socio-economic status on academic achievement of higher secondary students in rural and urban areas of Kanpur.</td>
<td>1000 higher secondary students</td>
<td>Academic achievement, intelligence and locality of schools</td>
<td>Correlation and t test</td>
<td>Samoohik Mansile Parikshan by Tandon for intelligence</td>
<td>Intelligence positively influenced academic performance. Significant difference existed between the academic achievement of rural and urban students.</td>
</tr>
</tbody>
</table>
### Facts Deduced From Indian Studies

#### Table 2.2

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Investigator</th>
<th>Year</th>
<th>Variables</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Agarwal, V.R.</td>
<td>1981</td>
<td>sex, and academic performance</td>
<td>Significant difference</td>
</tr>
<tr>
<td>2.</td>
<td>Das, S.</td>
<td>1986</td>
<td>academic performance and intelligence</td>
<td>significantly correlated</td>
</tr>
<tr>
<td>3.</td>
<td>Kazmi, Q.S.</td>
<td>1986</td>
<td>Intelligence and sex</td>
<td>No Significant difference</td>
</tr>
<tr>
<td>4.</td>
<td>Verma, N.P.</td>
<td>1985</td>
<td>Intelligence and locality</td>
<td>Significant difference</td>
</tr>
<tr>
<td>5.</td>
<td>Kazmi, Q.S.</td>
<td>1986</td>
<td>intelligence and achievement motivation</td>
<td>significant relationship</td>
</tr>
<tr>
<td>6.</td>
<td>Rastogi, S.</td>
<td>1983</td>
<td>Performance in mathematics and intelligence</td>
<td>not correlated</td>
</tr>
<tr>
<td>8.</td>
<td>Kazmi, Q.S.</td>
<td>1986</td>
<td>academic achievement and achievement motivation</td>
<td>significant relationship</td>
</tr>
<tr>
<td>9.</td>
<td>Ojha, H.</td>
<td>1983</td>
<td>achievement motivation and religion</td>
<td>no significant difference</td>
</tr>
<tr>
<td>11.</td>
<td>Doctor, Z.N.</td>
<td>1984</td>
<td>academic achievement and school climate</td>
<td>significant relationship</td>
</tr>
<tr>
<td>12.</td>
<td>Narang, R.H.</td>
<td>1987</td>
<td>Academic achievement and teacher-pupil relationship</td>
<td>not significantly correlated</td>
</tr>
</tbody>
</table>

#### FINDINGS FROM INDIAN STUDIES:

**2.6.1 Sex and mathematics achievement:**


**2.6.2 Sex and intelligence:**


**2.6.3 Sex and anxiety:**

2.6.4 Sex and achievement motivation:


2.6.5 Sex and attitude towards mathematics:

Desai, H.G., (1973) found no significant difference between sex and attitude towards mathematics.

2.6.6 Reasoning ability and mathematical ability:

Patel, N.R., (1984) found there was a significant positive relationship between reasoning ability and mathematical ability.

2.6.7 Intelligence and academic achievement:

Sinha, N.C.P., (1967), Kumari Sudha, (1982) and Deshpande, S., (1986) are concluded that there was a significant relationship between intelligence and academic achievement and Mehrotra, S., (1986) and Misra, M., (1986) predicted that the relationship is positive. According to Deka, U., (1985), low academic achievement had significant positive relationship with intelligence.

2.6.8 Intelligence and Achievement in Mathematics:

Rajput, A.S., (1984) and Kabu, C.L., (1980) have found that significant influence between Intelligence and Mathematics achievement and Lalithamma. K.N., (1975) has shown that the relationship is positive.

2.6.9 Intelligence and Achievement Motivation:

Smt. M.L. Dutt, (1983) found no significant difference between Intelligence and achievement motivation. According to Singh, R., (1986), there is significant correlation between Intelligence and Achievement motivation and according to Abrol, D.N., (1977) the correlation is positive.

2.6.10 Intelligence and Interest in Mathematics:

According to Lalithamma K.N., (1975), Intelligence and Interest in mathematics are higher in boys and urban pupils than their counterparts.

2.6.11 Numerical ability and Mathematically gifted:

Kabu, C.L., (1980) stated that there was a significant relationship between Numerical Ability and mathematically gifted.
2.6.12 Interest in Mathematics and Achievement in Mathematics:

According to Lalithamma, K.N., (1975) and Patel, N.R., (1984), there was a significant positive relationship between Interest in Mathematics and Achievement in Mathematics.

2.6.13 Achievement Motivation and Academic Achievement:


2.6.14 Achievement Motivation and Mathematics Achievement:

According to Rajput, A.S., (1984) there was no significant influence between achievement motivation and mathematics achievement, but according to Singh, R., (1986), there was a significant correlation between those two.

2.6.15 Anxiety and Mathematical Ability:

Patel, N.R., (1984) found significant negative correlation between anxiety and Mathematical Ability.

2.6.16 Anxiety and Achievement Motivation:


2.6.17 Anxiety and Academic Performance:

Christian, J.A., (1977) has shown negative correlation between anxiety and academic performance.

2.6.18 Locality and Intelligence:

Tripathi R.C., (1986) concluded that students studying urban schools are better than their counterpart in intelligence.

2.6.19 Locality and Attitude to Mathematics:

Desai, H.G., (1973) found that Urban school students have more favourable attitude to mathematics.

2.6.20 Locality and Academic Achievement:

Misra, M., (1986) found that there was a significant difference between locality of schools and academic achievement and chakrabarti, S., (1988) concluded that urban better than Rural.
2.6.21 Locality and Performance in Mathematics
Lalithamma, K.N., (1975) found that urban students are superior to rural in performance in Mathematics.

2.6.22 Standard and Attitude to Mathematics.
Desai, H.G., (1973), stated that students of std X have favorable attitude towards mathematics than 9.

2.6.23 Locality and Achievement Motivation
Ahluwalia, I., (1985) found that there was no significant influence of locality on achievement motivation and Hirunval, A., (1980) proved that have more academic motivation than Urban.

2.6.24 Achievement in Mathematics and Order of Birth.
According to Lalithamma K.N., (1975) first borns are better than last born in achievement in mathematics.

2.6.25 Order of Birth and Achievement Motivation.
Ahluwalia, I., found that Birth order had no significant influence on achievement motivation.

2.6.26 Type of School and Academic Motivation:
Hirunval, A., (1980), found that Missionary schools had greater academic motivation. According to Ahluwalia, I., (1985), the students from Co-educational schools have more achievement motivation.

2.6.27 Type of School and Achievement in Mathematics.
Sabapathy, T., (1986) concluded that Private schools are higher government schools in Achievement in Mathematics.

2.6.28 Parental education and Achievement Motivation
According to Ahluwali, I., (1985) father's education significantly influences achievement motivation of their children.

2.6.29 Emotional Maturity and Achievement in Mathematics
Sabapathy, T., (1986) found significant positive relationship between emotional maturity and achievement in mathematics.

According to Lal K., (1986), superior pupils were significantly more stable. To Beedaawat, S.S., (1976), 75% of underachievers have average emotional stability.

2.6.30 Intelligence, Achievement Motivation and SES:
According to Rajput, A.S., (1984) no significant interaction between Intelligence achievement motivation and SES.
2.6.31 Intelligence, Achievement Motivation and achievement.

According to Tripathi, R.C., (1986), significant correlation between intelligence, achievement motivation and achievement.

2.6.32 Intelligence, achievement Motivation and gender:

Chaudhary, N., (1977) found that there was a significant relationship between Achievement motivation and Intelligence for girls and no significant relationship for boys.

2.7 FOREIGN STUDIES IN DETAIL:

Study No 1

Name of the investigators:

Title of the study:
The effects of family size, birth order, sibling separation and crowding on the academic achievement of boys and girls.

Objectives:
To determine if, in fact, family size, birth order, spacing and crowding have an effect on the academic achievement of boys and girls after the effects of intelligence have been controlled.

Sample:
537 families involved were white, intact, middle to upper-middle class families.

Major variables:
Family size, birth order, sibling separation, crowding, sex and academic achievement.

Tools:
Intelligence test and academic achievement test.

Statistical procedure:
Partial correlation.

Findings:
There is a significant association between boys and girls in their academic achievement.

For girls there is a significant association between being first born and achievement.

31
Study No 2

Name of the investigator:

Title of the study:
Factors influencing student mathematics achievement in the sixth grade.

Objectives:
To identify the difference in mathematics achievement with regard to sex.
To identify the relationship between mathematics achievement, intelligence, achievement motivation and their socio-economic status.

Sample:
125 sixth grade students.

Major variables:
Intelligence, mathematics achievement, achievement motivation, sex and socio-economic status.

Tools:
Survey of attitude towards mathematics and Checklist of teacher interactions with students by gender.

Statistical procedure:
Correlation and t-test.

Findings:
No significant difference in mathematics achievement with regard to sex.
Mathematics achievement significantly related to intelligence, achievement motivation and their socio-economic status.

Study No 3

Name of the investigator:

Title of the study:
The effect of motivation on the relationship of school climate, family environment and student characteristics to academic achievement.

Objectives:
To explore the influence of motivation on academic achievement.

Sample:
Ninth grade students.

Major variables:
Academic achievement and achievement motivation.
Statistical procedure:
Correlation

Findings:
Significant relationship between academic achievement and achievement motivation.

Study No 4
Name of the investigator:
Title of the study:
A cross-cultural study: linkages among intelligence, psycho-social maturity, parenting practices and academic achievements of adolescents.
Objectives:
To identify the relationship between academic achievement, intelligence, psychosocial maturity and parents education.
Sample:
715 students of age 14-18. (382 Koreans and 333 Americans)
Major variables:
Intelligence, academic achievement and parental education.
Tools:
Raven's standard progressive matrices.
Statistical procedures:
MANOVA analysis.
Findings:
Academic achievement was positively related to students' intellectual ability, psychosocial maturity and parental education.

Study No 5
Name of the investigator:
Title of the study:
The relationship among achievement orientation, parental communication and vocational maturity in high school students.
Objectives:
To explore the relationship among parent’s level of education and achievement orientation.
Sample:
High school students.

Major variables:
Parental education and achievement orientation.

Tools:
Achievement orientation sub-scale and Family environment scale.

Statistical procedure:
Correlation, ANOVA, multiple regression analysis.

Findings:
Mother’s level of education was significant with achievement orientation.

Study No 6
Name of the investigator:

Title of the study:
An investigation study of the relationship between single sex / co-educational school transition and sex role identity and achievement motivational factors.

Objectives:
To find out the significant difference between achievement motivation and sex.
To find out the significant difference between achievement motivation and single/mixed schools.

Sample:
Middle and upper school students.

Major variables:
Achievement motivation, sex and single/mixed schools.

Tools:
Bem sex role inventory and Work and family orientation questionnaire by Helmreich and Spence.

Statistical procedure:
ANOVA.

Findings:
No difference in achievement motivation between single/mixed schools.
No difference in achievement motivation with respect to sex.
<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
<th>Title</th>
<th>Sample</th>
<th>Variables</th>
<th>Statistics</th>
<th>Tools</th>
<th>Findings</th>
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</thead>
<tbody>
<tr>
<td>CEN</td>
<td>1997</td>
<td>The relationship between anxiety and children's performance on the</td>
<td>176 - 9 to 16 yrs old boys and girls</td>
<td>Anxiety, Performance, Sex &amp; Age</td>
<td>Regression Analysis &amp; Correlation.</td>
<td>Anxiety scale of the personality inventory for children and Reitan -</td>
<td>Anxiety was found to be significantly related to the total scores of the</td>
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<td>RIN</td>
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<td>Indian Aphasia Screening Test.</td>
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<td>India Aphasia screening test.</td>
<td>Reitan - Indian Aphasia screening test.</td>
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<tr>
<td>AAS</td>
<td>1997</td>
<td>Productivity &amp; Mathematics achievement &amp; Attitudes among African -</td>
<td>10.001 students (i.e., eighth, tenth &amp; twelfth grade cohorts)</td>
<td>Achievement &amp; Attitude</td>
<td>Reliability Analysis, Correctional analysis, ANOVA and multiple linear regression analysis.</td>
<td>Four sets structural equation models.</td>
<td>Students' mathematics achievement outcomes were influenced by ten of the four independence variables namely prior mathematics achievement, quantity instruction, self-concept, quality instruction, peer influence, and school socio-economic status.</td>
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<td>JHN</td>
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<td>Americans : Testing Walberg's Model.</td>
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<td>ER</td>
<td>1997</td>
<td>Four structural models of the effects of selected teacher background</td>
<td>Ninth &amp; Tenth grade mathematics students and their teachers</td>
<td>Primary interest, influence of family and student progress</td>
<td>Multivariate analysis</td>
<td>Four sets structural equation models.</td>
<td>Prior mathematics and attitude significantly predict achievement in mathematics. Location of the school relative to the degree of urbanism significantly affects tenth-grade mathematics achievement.</td>
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<td>UR</td>
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<td>variables on mathematics attitude and achievement.</td>
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<td>DE</td>
<td>1997</td>
<td>Psychological factors in school achievement</td>
<td>282 Seventh and eighth grade students from suburban middle school in northern New Jersey.</td>
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<td>Achievement, Gender, Intelligence and Motivation</td>
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<td>Multiple regression analysis,</td>
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<td>Tools</td>
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<td>Findings Motivation &amp; Intelligence were predictors of achievement.</td>
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<td>Girls showed higher levels of strategy on three scales: attitude, Motivation study Aids.</td>
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<td>Boys had higher scores on the anxiety.</td>
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<td></td>
<td></td>
<td>Emotion and its influences on mathematical problem solved</td>
<td>209 under graduates</td>
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<td></td>
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<td>Math’ interest, self esteem, emotion and mathematical problem solved</td>
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<td>Correlation</td>
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<td></td>
<td></td>
<td>The effect of single - sex mathematics classes on achievement and attitude for eighth grade students</td>
<td>151 eighth grade students, six teachers and one principal.</td>
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<td>Mathematics achievement &amp; attitude towards mathematics.</td>
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<td></td>
<td>1997</td>
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<td>Percentile Attitude towards mathematics &amp; achievement test</td>
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<td></td>
<td>Placing students in single sex classes did result in an increased level of mathematics achievement that was statistically different than the students that remained in mixed. The girls in all the girls classes were more positive at beginning than at the end of project than the girls in mixed but it is statistically significant. The boys in all boys class scored more positive at the end of the study than at beginning were less positive at the beginning than the boys in mixed, by the end of project to more positive than the boys mixed.</td>
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<td>Year</td>
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<tr>
<td>1998</td>
<td>INI, O TELL</td>
<td>941 students of form three</td>
<td>Attitude towards mathematics, achievement in mathematics, gender, interest and anxiety.</td>
<td>Multiple regression &amp; correlation</td>
<td>Instruments adopted from Peterson, Fennema,</td>
<td>There were no gender difference achievement</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>ON, N I,</td>
<td>299 students</td>
<td>IQ and achievement</td>
<td></td>
<td>Carpenter &amp; Deof</td>
<td>Intelligence significantly influen achievement in mathematics.</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>JN, AKE, NCE, L,</td>
<td>Nine middle school students White 54%, Black 18.2%, Hispanic 19.7% &amp; 15.2%</td>
<td>Academic achievement, self esteem, gender &amp; parental education</td>
<td>Multiple regression analysis &amp; Pearson's r, t test</td>
<td>Self esteem questionnaire</td>
<td>No significant difference was found between that poor self esteem of males and female students from all socio-economic groups</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>JN, D J, D TIAN</td>
<td>547 students of eighth grade</td>
<td>Mathematics achievement, gender, ability and motivation</td>
<td>Interactive multiple regression and structural equation modeling</td>
<td></td>
<td>Motivation did not have significant differences in male students</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td>63 precalculus students in single sex and mixed sex</td>
<td>Gender and mathematics achievement</td>
<td>ANOVA and Chi-square</td>
<td>The Fennema - Sherman mathematics attitude scales</td>
<td>Female students were neutral and positive about single sex setting whereas male students were negative. Results indicate that the single sex setting may improve female achievement</td>
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<td>Name</td>
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<tr>
<td>LID, IANMED</td>
<td>1997</td>
<td>Factors affecting mathematics in Malaysian schools.</td>
<td>1395 twelve year old Malaysian students</td>
<td>Gender Motivation &amp; previous achievement in mathematics.</td>
<td></td>
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<td>Female students performed significantly better in mathematics achievement.</td>
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<td>IR</td>
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<td>Students from urban schools and rural areas performed significantly better.</td>
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<tr>
<td>EM, TH A</td>
<td>1997</td>
<td>Gender difference in the relationship of attitudinal and background factors to high school students choice of math-intensive curriculum and careers</td>
<td>2900 high school students, their parents and their school principals</td>
<td>Gender, mathematics attitude &amp; math-intensive curriculum and careers.</td>
<td>Bivariate analysis</td>
<td></td>
<td>High school males showed more positive mathematics attitudes than high school females.</td>
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<td>Females chose higher mathematics in high school and aspired to math-intensive careers in numbers equal to males.</td>
</tr>
<tr>
<td>ER, LIFON</td>
<td>1994</td>
<td>A correlational study of children's social intelligence, socio influences, academic intelligence and achievement motivation.</td>
<td>85 fifth grade students</td>
<td>Intelligence and Achievement motivation</td>
<td>Correlation</td>
<td>DANOVASL</td>
<td>Academic intelligence significantly relates to academic achievement.</td>
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<td>receptive sub-tests of social intelligence and academic intelligence tests.</td>
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<tr>
<td>HEZ, ANNS</td>
<td>1994</td>
<td>Influence of achievement motivation and prior mathematics achievement on locus of control and mathematics performance as imparted through written instruction.</td>
<td>328 high school students</td>
<td>Achievement motivation mathematics achievement and locus of control.</td>
<td>Correlation</td>
<td>Mathematics achievement test</td>
<td>Achievement motivation significantly influenced mathematics performance.</td>
</tr>
<tr>
<td>Name</td>
<td>Year</td>
<td>Title</td>
<td>Sample</td>
<td>Variables</td>
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<td>H. AN.</td>
<td>1994</td>
<td>Relationship between family socio-economic status and academic</td>
<td>609 students</td>
<td>Academic achievement and parental education</td>
<td>Correlation, Chi-square &amp; ANOVA</td>
<td>-</td>
<td>No significant relationship between fathers' and mothers' education and academic performance.</td>
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<td>achievement of students in Jordan State universities.</td>
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<td>YER,</td>
<td>1994</td>
<td>Academic achievement and its relation to family background and locus</td>
<td>502 students of third,</td>
<td>Academic achievement, sex and parental education.</td>
<td>Correlation and Chi-square</td>
<td>Mathematics test</td>
<td>Academic achievement significantly related to second generation.</td>
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<td>MED</td>
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<td>of control.</td>
<td>Fourth, fifth &amp; sixth</td>
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<td>students.</td>
<td>high school students.</td>
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<tr>
<td>S. ACE</td>
<td>1995</td>
<td>Direct and Indirect effects of school learning variables on Black</td>
<td>1766 Black tenth graders</td>
<td>Achievement motivation and academic achievement</td>
<td>Correlation and ANOVA</td>
<td>Document analysis NELS-88</td>
<td>Academic achievement significantly related to achievement motivation.</td>
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<td>tenth graders</td>
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<tr>
<td>J. LEE</td>
<td>1995</td>
<td>Psycho-Social correlates of Academic achievement among college</td>
<td>41 (23 females &amp; 18</td>
<td>Academic achievement and intelligence</td>
<td>Correlation and ANOVA</td>
<td>-</td>
<td>Academic achievement was influenced by pupil's intelligence.</td>
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<td>students with learning disabilities.</td>
<td>males)</td>
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</tbody>
</table>
2.9 **FACTS DEDUCED FROM FOREIGN STUDIES:**

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Investigator</th>
<th>Year</th>
<th>Variables</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Jaskolka, Darrel</td>
<td>1995</td>
<td>Academic performance and fathers' level of education</td>
<td>Significantly related</td>
</tr>
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<td>2.</td>
<td>Jaskolka, Darrel</td>
<td>1995</td>
<td>Academic performance and mothers' level of education</td>
<td>Significantly related</td>
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<td>3.</td>
<td>Famularo, Domnick, F.</td>
<td>1995</td>
<td>Academic achievement and school climate</td>
<td>Significantly related</td>
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<td>4.</td>
<td>Al-Shahrany, Mohammed Saeed</td>
<td>1995</td>
<td>Academic achievement and school climate</td>
<td>Significantly related</td>
</tr>
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<td>5.</td>
<td>Al-Shahrany, Mohammed Saeed</td>
<td>1995</td>
<td>Academic achievement and locality of school</td>
<td>Significantly related</td>
</tr>
<tr>
<td>7.</td>
<td>Al-Shahrany, Mohammed Saeed</td>
<td>1995</td>
<td>Academic achievement and motivation</td>
<td>Significantly related</td>
</tr>
</tbody>
</table>

2.10 **FINDINGS FROM FOREIGN STUDIES:**

2.10.1 **Gender and academic achievement:**

Dlamini, Maxwell Sidumo (1998) has reported no significant difference between gender and achievement whereas Ena Vazquez Nuttal, Renald L. Nuttall, Dense Polit and Joan B. Hunter (1976) have proved significant relationship between them.

2.10.2 **Gender and mathematics achievement:**

CAI, WEIWEI, (1993) found no significant gender difference in mathematics achievement, whereas Khalid, Mohd Nasir, (1997) has proved that female students are significantly better than male students in mathematics achievement.

2.10.3 **Academic Achievement and Achievement Motivation:**

Nieruha, Katherine Evan (1994) and Adams Candace Renee (1995) found significant relationship between academic achievement and achievement motivation.

2.10.4 **Mathematics achievement and Achievement Motivation:**

Lai, Jin-Shei, (1996) found no significant influenced of motivation over achievement in mathematics; Whereas Sanchez, Lorin Ann Willis (1994) proved that achievement motivation significantly influences achievement in mathematics.

2.10.5 **Intelligence and Academic achievement:**

Gibbs Beverllee, (1995), found that intelligence does not influence academic achievement, whereas Oliver Ruth Newton (1994), proved significant relationship
between academic intelligence and academic achievement. OH-Hwang, Young Joo, (1994) has shown that the relationship is positive.

2.10.6 Intelligence and Achievement in Mathematics:

2.10.7 Attitudes towards mathematics and Achievement in Mathematics:
Thomas, John Phillip (1997) and Zuiker, Mark Arthur, (1997), found that Attitude towards mathematics is the significant predictor of achievement in mathematics.

2.10.8 Type of School and academic achievement:
According to Gouldji, J., Christine (1996) single sex setting improves female achievement.

2.10.9 Type of school and Mathematics Achievement:
Wear, Stella Brown (1997), proved significant difference between single/mixed schools and Achievement in mathematics.

2.10.10 Anxiety and Performance:
Kirkendall, Darrin John, (1997), proved significant relationship between Anxiety and Performance.

2.10.11 Locality of School and Achievement in Mathematics:
According to Khalid, Mohd Nasir, (1997) Urban performed significantly better than rural in achievement in mathematics.

2.10.12 Parental Education and Academic Achievement:
According to Qudah, Ibrahim Salman (1994) and Pho, Lantuyet, (1994), there is no significant relationship between Parental education and academic achievement; whereas Khayyer, Mohammad (1994), proved significant relationship between academic achievement and parental education.

2.10.13 Gender and Achievement Motivation:
Flanders, Judith Ann, (1992), and Lai, Jin-Shei (1996) proved no significant gender difference in achievement motivation whereas Schnedeker, John Allan, (1997) proved that girls are better.

2.10.14 Gender and Attitudes towards Mathematics:
Jensen, Judith, A., (1997) has shown that proved males have more positive attitude whereas Schnedeker, John Allan (1997) proved that girls are better.

2.10.15 Gender and self-esteem:
2.10.16 Achievement Motivation and Single/Mixed schools:

Handers, Judith Ann (1992) found no significant difference between single and mixed schools in Achievement Motivation.

2.10.17 Parental Education and Achievement Orientation:

Bowers, Mack Samuel (1994) found that mother's level of education was capable of significantly influencing achievement orientation.

2.10.18 Birth Order, Gender and Achievement:

Ena Vazquez Nuttal, Ronald L. Nuttall, Denise Polit and Joan B. Hunter (1976) proved significant association between gender, Birth order and Achievement and concluded that girls being first born are better in achievement.

2.10.19 Achievement in Mathematics, intelligence, achievement motivation and socio-economic status:

CAI, Weiwei (1993) has shown significant relationship between achievement in mathematics and intelligence, achievement motivation, socio-economic status, Academic achievement, psycho-social maturity, and parental education.

2.10.20 Location of school, Attitudes towards mathematics and achievement in mathematics:

Zuiker, Mark Arthur (1997) proved that Urban had significant indirect effects on Attitudes towards mathematics and achievement in mathematics.
REFERENCES

INDIAN STUDIES – IN TABULAR FORM.


8. Abrol, D.N., (1977), A Study of Achievement Motivation in Relation to Intelligence, Vocational Interests, Achievement, Sex and socioeconomic Status, Third Survey of Research in Education P.328


15. Ahluwalia, I., (1985), A Study of factors affecting Achievement Motivation, First survey of research in education P.333

16. Chaudhary, N., (1971), The Relationship between Achievement Motivation and Anxiety, Intelligence, Sex, Social class and Vocational aspirations, First survey of research in education P.145.

17. Lal, K., (1968), A Comparative Study of Emotional Stability of Mentally Superior and Average Adolescents, First survey of research in education P.156.

18. Sabapathy, T., (1986), A Study of the Relationship of Manifest Anxiety, Emotional Maturity and Social maturity of standard x students to their academic achievement, Fourth survey of research in education vol –I P.856.


22. Mehta, C.P., (1987), An Investigation into the Effect of Some Psychological factors on School Achievement of Scheduled Caste and Scheduled Tribe students and the students as Identified by the Basic Commission in Souhrashtra, Fourth survey of research in education vol –I P.836-842.

23. Deshpande, S., (1986), Interactive Effects of Intelligence and Socio-economic status of students and Homework on the Achievement of Students, Fourth survey of research in education vol –I P.820.

24. Chakrabarthi, S., (198), A critical study of the Effect of Mental Ability, Socio-economic Background of the family, Educational Environment in the family, Educational Environment in the family and Quality of the School on the Academic Achievement of Children of std V: A case Study of some schools in and Around Pune, Fourth survey of research in education vol –I P.852.


27. Patel, N.R., (1984), An investigation into the Mathematical Ability if Pupils of classes IX and X is the context of some cognitive and Affective variables, fourth survey of research in education vol –I P.704.


29. Singh, R., (1986), An Investigation into the Relationship Between Achievement – Motivation, Intelligence (General Mental Efficiency) Introversion – Extroversion, Achievement in Mathematics, and a comparison thereof between Haryana, and Delhi students Belonging to various socio – cultural strata, fourth survey of research in education vol –I P. 436.


**STUDIES IN ABROAD – TABULAR FORM**

middle school students, Dissertation Abstracts International vol57, no:8 Feb 1993, P:3391-A


REFERENCES FOREIGN STUDIES IN DETAILED FORM


