CHAPTER-2

REVIEW OF THE RELATED LITERATURE

2.0.0 INTRODUCTION

The review of related literature forms the foundation upon which a study can be done. It helps the researcher to get to the frontier in a particular field of knowledge. Before starting the study, if the researcher goes through the research works on that issue, it helps the researcher to develop insight into the problem. It develops the ideas about the methods of research on that particular issue. What are the advantages & disadvantage of the methods used, faced. So it gives an awareness to the researcher to design research proposal. Based on the knowledge of reviewing the related literature the researcher can learn what others have done & what remains to be done.The purposes of the review of related literature can be summarised as follows:

1.   To show whether the evidence already available to solve the problem adequately without further investigation and thus to avoid the risk of duplication.

2.   To provide ideas, theories, explanation or hypothesis valuable in formulating problem.

3.   To suggest methods of research appropriate to the problem.

4.   To locate comparative data useful in the interpretation of results.

5.   To contribute the general scholarship of the investigator.

It has been mentioned earlier that a good number of factors influence academic achievement of students in different degrees. These variables are generally referred to as correlates of achievement. The correlates have been classified broadly into three categories:

i.   Individual factors

ii.   Home factors

iii. Institutional factors (i.e. school)

This review covers previous investigations and studies done under each heading. The studies done during the years 1978 to 1993 have been considered for the review. After reviewing studies related to each factor, **summary of the reviews and methodological trends in researches on each factor are** discussed.

INDIVIDUAL FACTORS

The individual factors cover psychological characteristics like [a] Intelligence [b] Personality [c] Motivational factor, [d] Interest, [e] Attitude, [f] Creativity, [g] Other factors- like study habits, health, extra curricular activities, age, caste etc. In this research, only three individual factors, namely, Motivation, Creativity and Nutritional level have been investigated as correlates of academic achievement.

2.1.0   REVIEW OF THE STUDIES ON CREATIVITY AND ACADEMIC ACHIEVEMENT

Acharyulu, S.T.V.G (1978) studied the relationship among Creative Thinking, Intelligence and School Achievement. A random

sample of 400 urban pupils (200 boys and 200 girls) was drawn from a dozen schools. Torrance Test of Creative Thinking (TTCT), both verbal and figural batteries (Translated into Telegu), Cattell's Culture Fair Intelligence Test were used as tools. Achievement was based on two successive school examination marks in five subjects. Correlation and 7 x 3 factorial analysis of variance designs were used to test the hypothesis. The main findings of the study were: (i) The correlations between verbal TTCT and school achievement were as high as those between intelligence and school achievement. (ii) The achievement of the high intelligence and high verbal creativity around in different school subjects was significantly higher than that of the low intelligence and low verbal creativity groups.

Dhaliwal, G.S (1979) tried to verify whether the discrepancy between scholastic achievement and intelligence correlate in any way with different components of creativity such as originality, elaborative, flexibility and fluency. In this study, residual achievement has been defined operationally in terms of the discrepancy between achievement and intelligence. The study was completed on a sample of 433 male students of high school classes. The measure of intelligence was based on verbal and non-verbal tests of intelligence. The index of residual achievement which had become independent of the influence of intelligence was correlated with 12 measures of creativity, six based on verbal tests and Six on non-verbal tests of creativity. The findings were: (i) Fluency on seeing problems test

independent of intelligence was significantly, positively related with residual achievement in English, Social studies and Punjabi; but fluency on consequences test was found positively related with all subjects. Fluency on unusual uses of test was found positively related with mother tongue. (ii) Originality on consequences test, found independent of intelligence, is associated positively with English, Social studies and Punjabi. Originality on picture completion test was found related with only Social Studies.

Sharan, G (1979) studied the relationship of the dependent variables, originality and fluency, with low and high academic achievers among arts and science students. A sample of 600 male urban adolescent students of high schools and intermediate colleges were taken. The low and high achievers of arts group and science group were compared in terms of their creativity. It was found that lower achievers and higher achievers are not significantly different with regard to associational, expressional, and word fluency. Results prove that students with low academic achievement also possess power of original thinking, so they should be treated and guided properly like students with high academic achievement.

D'Lima, C.D. (1979) studied a comparative study of the different types of achievers among the different types of gifted pupils, namely, the creatively gifted and the intellectually gifted ones. The sample consisted of students of standard IX from twenty five English medium schools in Bombay. The tools used for

data collection were Passi's Test of Creativity, Nafde's Non-verbal Tests of Intelligence. The major findings of the study were: (i) there was significant difference between the different types of gifted pupils, (ii) there was significant difference between the low and the high achivers amongst the different types of gifted pupils.

Menon, P.A (1980) studied the relationship between Intelligence, Achievement and language Abilities. A sample of 301 was selected from six English medium shcools. The tools used were: (i) the Language Ability Test to measure the students' language ability in vocabulary, grammar, comprehension and composition and (ii) Standard Progressive Matrices Test to measure the intellectual capacity. Creativity tests 1 and 2 were used to measure the creative ability. Analysis of data was carried out by computing the means, significance of difference between means, standard deviations, correlations, multiple regression and analysis of variance. The major findings of the investigation was that: creativity correlated, first, with language, then achievement, followed by intelligence.

Basu, A. K. (1983) studied creativity as related to intelligence, academic achievement and security-insecurity. The sample consisted of 400 high school students of class X. The tools used were, (i) Raven's Progressive Matrices, (ii) Creativity test designed by N.S. Chauham and G. Tiwari and adopted by Basu in Bengali, (iii) annual examination result was the determinant for achievement. To analyse the data product

moment correlation was found out. The findings were: (i) The correlation between creativity and intelligence was 0.90 (ii) Intelligence and academic achievement was 0.92 (iii) creativity and achievement was 0.51.

Sharma, S. (1987) studied the predictive value of only the intellectual factors of academic achievement. The sample was drawn from 750 male students studying in higher secondary institutions of Uttar Pradesh. The tools used were: (i) Mehrotra's Group Test of Intelligence (Verbal & Non varbal), (ii) Baquer Mehdi's Test of Creative Thinking (verbal). As a measure of academic achievement the marks obtained in different subjects in the three streams were taken. The statistical technique of analysis of covariance was employed to eliminate the effect of the control variables. The findings were: (i) Verbal intelligence does not seem to differentiate the high and low achievers of literacy and commercial streams. (ii) Non-verbal intelligence does not seem to differentiate the high and low achievers of literary and commercial streams. (iii) Creativity does not seem to differentiate the high and low achievers of literacy and scientific streams.

Chadha, N. K. (1987) attempted to understand the nature of creativity, intelligence, achievement motivation, personality adjustment and scholastic achievement characteristics of the individual. The sample consisted of 300 students of class X in the age-range of 14 to 16 years from the Government schools. The tools used in the study were: (1) Torrance Tests of Creative Thinking (Verbal Form A and Figural Form A), (2) Cattell's Jr.

Sr. HSPQ, (3) Raven's Advanced Progressive Matrices, (4) Sinha's Adjustment Inventory, (5) Rao's Achievement Motivation Test. To assess the scholastic achievement, the average of the marks of the annual examination and half yearly examination were taken. The data obtained were analysed on the basis of (a) Descriptive Statistics (b) Correlative and Multiple Techniques. The multivariate techniques included factor analysis and cluster analysis. Positively significant correlation was found between (i) creativity and intellectual capacity (ii) Creativity and factor G (iii) Creativity and factor Q2 (iv) Creativity and Scholastic Achievement. In Factor Analysis, nine factors were extracted from the 36 variables analysed. The nine factors were: (1) Verbal Creativity (2) General Scholastic Achievement (3) Motivational Adjustant (4) Figural Creativity (5) Super ego and self assuredness (6) Restless Motivation and Dependency (7) Individualistic Motivation and Intelligence (8) Emotionally stable Adventurous and Phlegmatic Self-assured (9) Figural and Realistic Creativity.

Rodriguez, E (1987) studied the impact of Creativity Training on academic achievement. The sample in the study consisted of 269 fourth grade students from six elementary schools. Test of Basic Skills (CTBS) was used to measure academic achievement. Meeker's structure of Intellect Learning Abilities Test was used to measure creative thinking abilities. Four treatments were utilized to give training on creativity. The teachers received instruction on how to incorporate creativity training into the teaching of the regular classroom curriculum. The students who

attended the classes, designed to give the training, were identified by their teachers as belonging to the top 15% of their classes.

2:1:1 Methodological Trends in Research on Creativity and Academic Achievement

Tools Used :

To measure creativity, in most of the cases Torrance Test of Creativity (Verbal and Non-verbal) was used. In three of the cases Passi's Test of creativity, Creativity Test of Chauhan and Tiwari and Mehdi's Test of creativity were used.

Except in one case, the school result was considered to be the measure of academic achievement.

Methodology:

The samples were drawn mostly from secondary schools and colleges. Only in one case (Rodriguez, E. 1987) the sample was drawn from elementary school. Only one or two classes/grades were included in the studies.

As statistical techniques in most of the cases, correlation, multiple regression, analysis of variance were used. In one or two studies, factor analysis was used. The researches were mostly survey type and quantitative in nature.

Findings:

Acharyulu (1978), Dhaliwal, G.S (1979), D'Lima (1979), Menon (1980), Basu (1983), Chandra (1987), Rodriguez (1987), found positive correlation between creativity and academic achievement.

Sharan (1979), Sharma (1987) found no significant relationship between creativity and academic achievement.

TABLE : 2.1 SUMMARY OF THE REVIEW OF RESEARCHES ON CREATIVITY AND ACADEMIC ACHIEVEMENT

Year	Author	Sample Size	Nature of the Research	Tools & Techniques used	Analysis Techniques	Findings
1978	Acharyulu, S.T.V.G	400 students Level: School	Survey & Quantitative	1. Torrance Test of Creative Thinking 2. Cattell's Culture Fair Intelligence Test	1. Correlation 2. 7 x 3 factorial analysis of variance	The achievements of the students with high intelligence and high creativity were higher than the students of low intelligence and low creativity.
1979	Dhaliwal, G.S.	433 students Level: High school	Survey & Quantitative	1. Verbal and Non-verbal Tests of Intelligence. 2. Verbal and Non-verbal Tests of Creativity	---	Fluency and originality on different tests of creativity were found significantly positively related with residual achievement.
1979	Sharan, G.	600 students Level: High school	---	---	---	Low achievers and higher achievers were not significantly different in the different components of creativity.
1979	D'Lima, C.D.	-- Level: standard IX	---	1. Passi Test of creativity 2. Nafde's Non-verbal Tests of Intelligence	---	Significant difference was found between the low and high achievers amongst the different types of gifted pupils (Creative and intellectual).
1980	Menon, P.A.	301 student Level:	Survey & Quantitative	1. Language ability test 2. Standard progressive Matrics Test.	Means, Standard deviations, correlation, Multiple regression, Analysis of variance.	Creativity correlated highest with language, the next being achievement followed by intelligence.
1983	Basu, A.K.	400 students Level: High school	Survey & Quantitative	1. Raven's Progressive Matrices. 2. Creativity test by N. S. Chauhan and G. Tiwani	Product moment correlation	The correlation between creativity and academic achievement was 0.51.
1987	Sharma, S.	750 students Level: College	Survey & Quantitative	1. Mehrotra's Group Test of Intelligence 2. Baquer Hedhi's Test of Creative Thinking.	Analysis of Covariance	Creativity does not seem to differentiate the high and low achievers of literacy and scientific streams.

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Year	Author	Sample Size	Nature of the Research	Tools & Techniques used	Analytical Technique	Findings
1987	Chandra, N.K.	300 students Level: Class X	Survey & Quantitative	1. Torrance Tests of Creative Thinking 2. Cattell's Jr. Sr. HSPQ 3. Raven's Advanced Progressive matrics.	1. Correlation 2. Factor analysis and cluster analysis 3. t-test	Positively significant correlation was found between creativity and scholastic achievement.
1987	Rodriguez, E.	269 students Level: Elementary school	Experimental & Quantitative	1. Test of Basic skill 2. Meeker's Structure of Intellect Learning Abilities Test 4. Sinha's Adjustment Inventory. 5. Rao's Achievement Motivation Test.	---	Training on creativity has positive impact on academic achievement

Note :   .... Information was not available

2.2.0 REVIEW OF THE STUDIES ON MOTIVATION AND ACADEMIC ACHIEVEMENT

Pratibha, A. P (1978) studied achievement motivation, school performance and Educational Norms of Secondary School Pupils. She considered many variables in her study. Only the relevant aspects of her study will be discussed here. Pratibha tried to find out the level of academic performance of pupils with high achievement motive and low achievement motive. The study was confined to a sample of pupils studying in standard VIII, IX, X of Bombay City. A total of 1,100 pupils from secondary school were selected randomly. To measure motivation TAT JIM scale were administered. Kuppuswami's SES was also administered with other tests. The Findings were:

(1) Achievement of Bombay city pupils was ($\bar{X}$=6.44) higher than Madras, Kaira, USA, Brazil & Germany.

(2) The mean score of JIM (Junior Index of Motivation) for the pupils of Bombay is 93.83. It can be said that pupils' motivation towards schools was very low in Gujarat and Bombay compared to the USA schools.

(3) The mean score of performance was 46.82. In this study performance was positively & highly related to achievement motivation.

Desai, S. D (1979) tried to investigate in the following areas (i) pupils' motivation, academic achievement and non academic achievement, (ii) classroom climate, pupils' motivation, (iii) academic and non-academic achievement and SES. The sample was

selected from secondary schools; and the number was 1,555. To measure motivation of the pupil Junior Index Motivation of Frymier was used; and Kuppuswamy SES scale was used to measure SES. Academic Achievement Rating Scale and Non-Academic Achievement Rating scale was constructed by the investigator. Desai's findings were: (i) pupils' academic motivation was positively related to their academic achievement. (ii) Boys' academic motivation was higher than girls'. (iii) Boys' schools had higher mean scores in pupils' motivation, academic achievement, classroom climate than mixed and girls' schools.

Siddiqui, B.B (1979) studied effects of Achievement Motivation and Personality on Academic Success. One of the objectives of his investigation was to study the difference with respect to personality, achievement and motivation among rural, urban and overseas students. The sample consisted of 450 college students. Mukherji's forced choice Test of Achievement Motivation was used to measure motivation. He found that personality and achievement motivation differed in the rural, urban and overseas students. Findings of the study were as follow:

1. There was a mutual relationship between intelligence, achievement & personality.

2. Family background factors had positive relationship with the academic achievement, when intelligence was constant.

Vats, A (1980) studied bio-chemical correlates of scholastic achievement, achievement motivation, creative functioning and anxiety, His investigation aimed to find out the relationship

between serum uric acid and serum cholesterol with scholastic achievement, achievement motivation, creative functioning and anxiety. 150 male college level students were taken as the sample. To measure motivation Mukherjee's Sentence Completion test was given. Torrance test of creative thinking, Sinha W-A self analysis form was given to measure creativity & anxiety level. Scholastic Achievement was determined by result of the last examination. The following results were obtained by the researcher.

1. Serum Uric Acid, Serum Cholesterol & Scholastic achievement did not show significant relationship.

2. Serum Uric Acid was not significantly related to the factor of achievement motivation.

Hirunval, A. (1980) investigated the relationship between academic motivation, self-concept, classroom climate and academic achievement. The sample was drawn from the students of class IX of 3 different types of schools. The total number of sample pupils was 1,031. The tools for data collection consisted of a test for measuring Self-Concept (Who-am-I technique), and Junior Index of Motivation (JIM) for measuring academic motivation. Descriptive statistics and product moment coefficient of correlation were used to analyse the data. The major findings were:

i.   Academic motivation was positively related with self-concept and classroom climate.

ii. Boys were more academically motivated than girls. Pupils in rural areas were more academically motivated than those in the urban areas.

iii. Self-concept and pupils' academic performance and pupils' academic motivation and classroom climate were positively correlated.

Kozeki, B. and Entwistle, N.J (1984) studied identifying dimensions of school motivation in Britain & Hungray. Besides academic achievement motivation, **they** studied the other dimensions of school **motivation, such as** fear of failure, extrinsic motivation related to **external rewards and** intrinsic motivation out of personal· **interest in the subject matter** itself. Four schools in **Britain and three** schools in Hungary were chosen to reflect the **range of pupil intakes** typical of the two countries. The British sample had 180 **boys and** 185 girls. The three Hungarian schools were **chosen from** Budapest. The total number of students was 800, (390 boys & 410 girls). For both of the countries full range of ability and socio-economic status was covered in the sample. The findings **were as follows:**

i) Hungarian means in the six motivational dimensions were consistently higher than the British means and the range of means between the different types of school was greater in Britain than in Hungary.

ii) In the Hungarian sample competence scores were consistently higher than interest while the reverse was true in the British sample.

iii) Hungarian girls had very much higher scores in both responsibility and compliance than any other group.

iv)   Little apparent difference in mean responsibility scores was found between the samples of British and Hungarian boys, but the Hungarians showed higher levels of compliance.

v)   The British sample were more critical of teachers but showed higher recognition of the value of school work than those in Hungary. The Hungarian children saw collaborative work as more important than competition and saw punishment in schools as fair (There is no corporal punishment at all in Hungary).

Marsh, H. W (1984) studied experimental manipulations of university student motivation and their effects on examination performance. The purpose of the study was to determine the effects of incentive level, content coverage and lecturer expressiveness. 416 students were taken as sample. They were the undergraduate and graduate students who were enrolled in one of the three sections of an undergraduate general studies course in the United States. Six videotaped lectures were produced for the study. They were all on the bio-chemistry of learning and memory; and were presented by the same professional actor, but varied systematically in terms of content coverage and lecturer expressiveness. All students who attended the class on the day of the experiment participated in the study. The students in the first experiment were given little or no incentive to learn the material or to perform well in the examination. Students in the second experiment were given one of the two levels of monetary incentives that was based upon test performance. At both levels of incentive students were paid for participating in the study

and an additional $5 for each item on the achievement test that they answered correctly. In one condition called 'incentive to learn and perform' students were told of the added incentive before viewing the lecture and taking the examination. In the other condition called 'incentive to perform' students were told of the added incentive after viewing the lecture but before taking the examination. The findings of the results were as follows:

i)   Lecturer expressiveness has a large effect where there is no added incentive; but fails to reach statistical significance in either of the other two incentive conditions.

ii) Newman-Keuls tests were used to compare differences due to incentive levels separately for each of the three conditions (i.e high, medium & low content conditions). At the low level of content the difference between the incentive-to-perform and the incentive-to-learn and perform conditions failed to reach statistical significance, but all other comparisons did.

iii)   The effect of the different levels of incentive shows that by offering students an added incentive their examination performance will improve. Furthermore, the significant difference between the incentive-to-perform conditions suggests that the added incentive has separate effects on the motivation to learn and the motivation to do well on the test. Students who were told of the added incentive just before taking the examination presumably had no opportunity to improve their learning of the materials.

Rajendra, S. (1988) Studied the relationship between achievement motivation, intelligence, introversion-extroversion, SES and achievement in mathematics. The sample were drawn from male students of secondary schools of Delhi. Tools used were: (i) B. N. Mukherjee's Sentence Completion Test (SCT) to measure motivation (ii) Ravan's Progressive Matrics was used to provide global measure of intelligence. (iii) Kundu's Introversive Extroversion Inventory (KIEI) used to measure introversion-extroversion. In view of inter-school variations in school achievement scores, an objective type achievement test was prepared by the investigator. The findings were:

1) The relationships between achievement motivation and SES, intelligence, academic achievement amongst boys were significant.

2) The difference in achievement motivation amongst boys identified as belonging to high and low achievement motivation groups in case of Delhi boys was significant while in case of boys of Haryana sample was not significant.

Elliott. J. L (1989) reviewed the literature on the relation between motivational techniques and academic achievement. The review covered the period from 1967 through 1985. 496 review were done. The project involved an investigation and presentation of selected research findings and reviews on motivational techniques related to academic achievement to provide a resource and reference for teachers and educators interested in this area. He grouped motivation techniques into four categories.

1.   Methodological   incentives-   Cooperative   learning,
instructional objectives, direct instruction and goals.

2.   Social   incentives-   Expectations,   feedback,   praise,
reinforcement & monetary approach.

3.   Technological   incentive-Educational   games,   television,
instructional television, programmed instructional materials,
visual and audio-equipment.

4.   Technological incentives used in teaching hypnosis & home
work.

Gregory et al (1989) studied prediction of academic achievement
using the School Motivation Analysis Test for Mathematics and
English. The study was conducted among 277 students (99 males,
178 females) whose mean age was 15.4 years and SD was 0.5 years.
The sample was taken from a wide spread of students from various
socio-cultural backgrounds.

Mathematics and English were compulsory subjects at year 10
level in all four-schools involved. Questions used for
mathematics were taken from the Australian Mathematics Item
Bank, while the English skills Assessment Test served as the
other measure. Product moment correlations of English and
Mathematics with all SMAT variables were estimated. The
integrated components of Assertiveness, Mating, Fear and self-
sentiment are all positively related to English performance but
not to Mathematics. Generally both the unintegrated and conflict
components of several of the dynamic traits exhibited a negative
association with achievement scores, while the integrated and

total motivation components seem to relate positively to achievement in both subject areas. Therefore he concluded that motivational dynamic traits may contribute positively to academic achievement to the extent that they are integrated/expressed in the individual's daily life. On the other hand, academic achievement may be adversely influenced in direct proportion to the degree of motivational tension which is unexpressed in the individual's daily life.

Haque, S. (1990) studied the relationship between Bangladeshi high school students' motivational orientation and their achievement in English as a foreign language. The other objective was to examine the influence of parents and teachers on students' attitudes and motivation to learn English. Two hundred forty 10th grade students randomly selected from high schools in Dhaka City, Bangladesh constituted the sample. The instruments used were: (i) Gardener's Attitude/Motivation Test Battery (modified version) (ii) An Achievement Test prepared by an English language Teaching Task Force set up by the Government of Bangladesh in 1975. (iii) A questionnaire used to collect data from the parents. (iv) Teacher's attitudes were assessed through a questionnaire. SPSS computer programme package was used, for correlation, t-test & factor analysis. The findings were as follows

i. An instrumental orientation is a better predictor of achievement than an integrative orientation.

ii. Achievement in English is facilitated by favourable attitude towards and a strong motivation for learning the language.

iii. Parents play a significant role in children's attitudinal/motivational development.

iv. A modest positive association was found between teachers' and students' attitude to the target language.

Jane, H. B (1990) the objective of the study was to analyze retained students' perceptions of their elementary grade retention experience. A total of twenty one sixth and ninth grade students, previously retained at either the fourth or fifth grade level, were interviewed. The sample was taken from the same school. From a content analysis of student interview transcripts, nineteen emergent categories of student perceptions were derived. The author tried to get answer on the following questions: (a) How does elementary grade retention influence student academic motivation as perceived by retained students? (b) How does elementary grade retention influence student social development as perceived by retained students? (c) How does elementary grade retention influence student self-esteem as perceived by retained students? The researcher concluded that social and emotional determinants of grade retention had more influence on the students than academic benefits.

Marcia, P. (1991) studied relationship between motivational style, academic achievement & satisfaction with classroom. She tried to examine students' current motivational style through the use of the Self-Regulation Questionnaire (SRQ). The academic achievement assessed through the reading comprehension & Mathematics computation subtests of the California Achievement. Test (CAT). The sample size was 206, drawn from a diverse ethnic and Socio-economic group. The students were in 3rd and 6th grade. Correlations and a two or three way analysis of variance were done. The finding was as follow:

(i) Third graders showed more significant and consistent relationship among all three dependent variables than their sixth grade counterparts.

Sing, S. H (1992) tried to see the difference between male and female secondary students with regard to achievement motivation. 300 students from secondary schools were taken as sample. To study achievement motivation the Mcdolland TAT cards adopted by Sinha was used. He hypothesised that the male students would tend to show strong achievement motive as compared to female students, but the findings could not substantiate the hypothesis.

2.2.1 Methodological Trends in Research on Motivation and Academic Achievement

Tools used:

To measure academic motivation, in most of the cases the Indian

researchers used TAT, Frymier Junior **Index**, Mukherjee's Sentence

Completion, Mehta's Achievement Motivation Inventory.

Gardner's Attitude/Motivation **Test Battery**, School Motivation

Analysis Test, Self-Regulation **Questionnaire** were used by the

foreign researchers.

To measure academic achievement **only** school result was

considered (except HAQUE 1989).

Methodology:

The samples were drawn from Secondary Schools, college and

graduate level. Only in one case (**Marica 1991**) the sample was

drawn from the primary school. **Only one or two** classes/grades

were included in the studies.

Co-efficient of correlation, **regression, t-test, analysis** of

variance, factor analysis (only in one case) were used to

analyse the data. The researches were mostly quantitative in

nature.

Results:

Pratibha (1978), Desai (1979), **Kozeki (1984), Marsh** (1984),

Rajendara (1988), Gregory (1989), **Haque (1989),** Jane (1990),

Marcia, K (1991), Sing (1992) found positive correlation between

motivation and academic achievement.

On the other hand, Vats (1980) found **no** relationship between

motivation and academic achievement.

TABLE : 2.2 SUMMARY OF THE REVIEW OF RESEARCHES ON MOTIVATION AND ACADEMIC ACHIEVEMENT

Year	Author	Sample Size	Nature of the Research	Tools & Techniques used	Analytical Techniques	Findings
1978	Pratibha, A.P	1,100 students Level: Secondary School		TAT JIM Scale	--	1. Students performance was positively and highly related to achievement motivation.
1979	Desai, S.D	1,555 students Level: Secondary School	Survey & Quantitative	i. Junior Index Motivation. (Frymier)	Descriptive statistics, t-test & product moment correlation.	1. Academic motivation was positively related to academic achievement. 2. Boys' schools had higher mean scores in pupils' motivation, academic achievement, classroom climate than mixed & girls' schools.
1979	Siddiqui, B.D	450 students Level: College	Survey & Quantitative	1. Thematic Apperception test 2. Mukherjee's forced choice test of academic motivation. 3. College examination mark	1. Frequency distribution. 2. F-test & chi-square test.	1. Positive relationship was found between intelligence, achievement & personality. 2. Family background factors had positive relationship with academic achievement.
1980	Vats, A	150 male students level : Under graduate	Experimental & Quantitative	1. Sentence Completion Test (Mukherjee) 2. Torrance Tests of creative thinking. 3. Examination result	1. One way analysis of variance. 2. Product moment Co-efficient of Correlation. 3. Tetrachlonic correlations & factor analysis.	1. Serum Uric Acid, Serum Cholesterol & Scholastic achievement did not show significant relationship. 2. Serum Uric Acid was not significantly related to the factor of achievement motivation.

Year	Author	Sample	Nature of the Research	Tool & Techniques used	Analytical Techniques	Findings
1980	Hirunval, A	1, 031 students level : Secondary	Survey & Quantitative	1. Junior Index of Motivation (JIM)	1. Descriptive statistics & product moment Co-efficient of Correlation	1. Academic motivation was positively related with self concept, classroom climate. 2. Boys were more academically motivated than girls. Pupils in rural areas were more motivated than those in the Urban area. 3. Self concept, pupils' academic motivation, pupils' academic performance were positively related.
1984	Kozeki, B	800 students from Britain, Hungary level : Secondary	Survey & Quantitative	1. 60 items Hungarian inventory was translated into English.	1. Descriptive statistics X & SD. 2. Inter Correlation between the sub-scales of the inventory.	1. Hungarian means in the six motivational dimensions were consistently higher than British means.
1984	Marsh, H.W	416 students level : Under graduate & graduate student	Experimental & Quantitative	1. Six Videotaped lectures 2. 26 items multiple choice examination	1. 3x2 ANOVA	1. Lecturer expressiveness had a large effect when there was no added incentive. 2. The effect of the different levels of incentive showed that by offering added incentives students' examination performance can be improved.
1988	Rajendra, S	Male students level : Secondary Schools.	Survey & Quantitative	1. Sentence Completion Test (SCT) by B.N. Mukherjee 2. Objective type achievement test (by investigator)	1. Correlation	1. The relationship among achievement motivation and SES, intelligence, academic achievement amongst boys were significant.

Contd.

Year	Author	Sample Size	Nature of the Research	Tools & Techniques used	Analytical Techniques	Findings
1989	Elliott, J.L.	496 review were done.	Review & Quantitative	---	---	Categorized the motivation techniques into four categories. 1. Methodological incentives 2. Social incentives 3. Technological incentives 4. Technological incentives used in teaching, hypnosis & home work
1989	Gregory	277 students Level: Secondary Australia	Survey & Quantitative	1. School Motivation Analysis test (SMAT)	1. Product moment correlations	1. Motivational dynamic traits contribute positively to academic achievement.
1990	Haque, S.	240 students. Level: students of X Grade	Survey & Quantitative	1. Achievement test prepared by Task Force set by Government of Bangladesh 2. Questionnaire were used to collect data from teachers & parents.	1. Correlation 2. t-test 3. factor analysis	1. Achievement in English is facilitated by favourable attitudes & strong motivation for learning the language. 2. Parents & teachers play a significant role in motivational development.
1990	Jane, H.B.	21 students Level: Sixth and Ninth grade	Survey & Quantitative	Interview	Content analysis of student interview.	1. Social & emotional determinants of grade retention had more influence on the students than academic benefits.
1991	Marcia, P.	206 Students Level: Elementary (3rd) & Secondary (6th) grade	Survey & Quantitative	1. Self Regulation Questionnaire (SRQ) 2. California Achievement test.	1. Pearson's r, t-test, Z-test 2. Analysis of variance	1. Third graders were likely to report more internal motivation al style with higher achievement test scores & report more satisfaction with classroom structure & overall level of motivation.
1992	Sing, S.H.	300 Students Level: Secondary	Experimental	1. Macdolland TAT cards adopted by Sinha	---	1. Male students did not show strong achievement motive as compared to female students.

Note :   .... Information was not available

2.3.0   REVIEW OF THE STUDIES ON NUTRITIONAL LEVEL AND ACADEMIC
ACHIEVEMENT

No research was found by the researcher on Nutritional Level in
the context of academic achievement.

2.4.0 REVIEW OF THE STUDIES ON HOME AND ACADEMIC ACHIEVEMENT

Courset, G.C (1979) studied the relationship between the 3rd
graders reading skill and the personal reading habits of the
parents   , and as whether or not they read to the child in his
pre-school years as well as currently. He found that father's
reading habits had a strong impact on boys. The same was true
for the mothers.

Salunke, R.B (1979) studied the relationship between home
environment, socio-economic status, economic management and
academic achievement. 693 students of the first year of the MS
university of Baroda were taken as sample. The tools were: (i)
Kuppuswamy SES scale, (ii) Home environment questionnaire and
economic management questionnaire developed by the investigator.
The data were analysed by mean, standard deviation, t-test and
correlation. The major findings were: (i) Educational facilities
and emotional happiness in the home contributed positively to
the academic achievement of the students but socio-economic
status was not related with academic achievement, (iii) Economic
management was related with academic achievement.

Ojha, K. P (1979) investigated the relationship between socio-
economic status and achievement of high school boys. The sample
was drawn from 1050 students from class IX. Information about
socio-economic status was provided by the students who filled in

the personal information questionnaire. The marks obtained in the high school examination served as the criterion for achievement. Data were analyzed to determine correlations. It was found that parental education, occupation and income were positively related with the academic achievement of both rural and urban groups.

Khanna, M. A (1980) studied the relationship between students socio-economic background and their academic achievement. The sample comprised 1000 students of classes VI, VII and VIII of thirty schools of rural and urban areas. Their result of half yearly and final examination were treated as academic achievement. For analysing the data the chi-square and contingency of correlation were used. The major findings were: (i) Socio-economic status was positively and significantly related with academic achievement. The correlation was more consistent in urban areas than in rural areas, (ii) The academic achievement of the students of different types of schools was significantly related with the socio-economic condition of their families.

Homchaudhuri, S. (1980) studied the relationship of self concept, anxiety, family influence and socio-economic status with academic performance. The sample consisted of 459 pre-university second year students of five colleges of Mizoram. The tools were: (i) Who Am I? and five other descriptive tools (ii) Socio-economic status and family influence scales (iii) Sinha's anxiety scale. The data were computerized; and means, standard deviations, correlations and t-ratios were computed and multiple

regression analysis was carried out. The major findings of the study were: (i) Self concept and Socio-economic status came out as a significant correlate of academic performance (ii) The high achievers found the emotional atmosphere of their homes to their liking whereas the low achievers found an absence of good environment at home.

Perkins I. W (1980) studied the effect parental participation on achievement. The sample consisted of 400 students and their parents. The tools were parent interview form and the Iowa Tests of Basic skills. Data were analysed by t-test, point biserial correlation. No significant difference was found between parental attitude toward education and student achievement both in experimental and control group.

Vijayalakshmi, J. (1980) studied academic achievement and socio-economic status as predictors of creative talent. The sample comprised 425 pupils of secondary schools. The tools used were: (i) Nair's Kerala University Test of Creative Thinking and (ii) Nair's Socio-economic scale data sheet. t-test was used for data analysis. The findings were: (i) Significant difference was found between high creative and low creative pupils both in academic achievement and in socio-economic status. (ii) Socio-economic status had a facilitating effect on the creative ability of the pupils.

Smith, M. K (1981) studied the relation between mother and teacher expectations and child academic and behavioral performance. 481 children were taken from kindergarten and 1st grade. It was concluded that the child classroom 'performance'

in academic and non-academic areas were affected by teacher expectations of academic achievement. Mother expectations were weakly associated with child academic performance.

Sutradhar (1982), in his research attempted to enquire into the relative academic achievements of the socially advantaged and disadvantaged children and to find out the socio-psychological factors associated with their relative academic achievements. The sample was 200 school children. The major findings showed although the two groups did not differ in respect to intelligence but the advantaged children were always superior to the disadvantaged children in respect to their academic achievement.

Bradley, R. H (1984), investigated the relation between the home scores and children' achievement test scores. The sample consisted of 32 normal first grade children and their families. The major findings were as follows: (1) Significant correlation was found between home scores & achievement. (2) correlation between play materials and achievement ranged from 0.58 for reading to 0.44 for mathematics.

Winegar, J. S (1984) studied the relationship among psycho-educational variables, parent child relations and achievement. The sample was 136 boys of 4th, 5th and 6th grade. The tools used were: (i) WISC-R and (ii) Children' Report of Parental Behavior Inventory (CRPB). Four regression analyses were done. Psycho-educational variables, handwriting, student age were found to be related to school achievement by grades.

Bartal et al (1984) study used a phenomenological approach to investigating individuals' attribution of success or failure.

The subjects were 92 seventh grade children, aged 12-13 drawn from two schools. Four similar instruments were used. In each instrument 24 causes of success and failure were listed and the subjects were asked to rate them. The list of causes indicates that the majority of advantaged and disadvantaged students considered 'preparation for a test at home' 'concentration during study', 'effort for studying', 'interest in a subject matter' and 'teacher's instructional ability' as the causes of success.

Harbin-Kemp, M. L (1985) investigated the relationship between parental involvement and academic achievement. The tool used were: (i) Self-report questionnaire to measure parental involvement, (ii) Achievement was measured by SRA assessment survey and teachers-given grades. The sample were 6th grade students & their parents. The findings of the result were: (i) a   correlation of 0.25 was found between grades and parental involvement, (ii) in step wise multiple regression it was found that ability is the best predictor of both SRA and grades.

Thomas, D.C (1986) conducted an experimental study to determine the effects of three home work approaches. The three approaches were: (i) Teacher-suggested Individualized Home work Instruction, (ii) Teacher-Supervised Home work Instruction, (iii) Traditional Home work Instruction. The sample was drawn from 7th grade level. 7th graders were taught one of the three homework approaches for 12 weeks. The Hummel and Sligo approach of Multivariate Analysis of Variance (MANOVA) was used to examine the data. Major findings of the study revealed that (a)

achievement scores (b) attitudes toward home work (c) study habits of students (d) assigned home work over a 12 week period were not significantly affected.

Al-Hamid, Y. M (1987) studied how primary school personnel in the state of Kuwait perceived parents participation in various aspects of school endeavors. The sample were 430 teachers & 72 administrators. A questionnaire was given to them. The findings of the study were: (i) Primary school teachers & administrators agreed that parents were playing various roles in the educational activities. (ii) Roles of parents signified that school personnel supported parents' involvement in about 94% cases. (iii) Teachers & school administrators did support the need for training of teachers in the area of home/school relationship.

Massey, E. P (1987) examined the ways in which the home environment varied in regard to three variables related to academic achievement. These variables were parental aspirations, independence training and adult-child interactions. The sample was 33 grade V students of a sub-urban school. Home environment data was obtained through formal interviews with the mothers by a semi-structural format. Yearly grade point average was taken as a measure of school achievement. Multiple regression analysis was used to determine relationship of variables. Significant relationship were found between adult child interaction and achievement and between parental aspirations and achievement.

Razouki, A. A (1987) studied socio-economic factors on students' academic achievement. The sample was drawn from 12th grade in

Bagdad. The data were analyzed by using correlation co-efficient, partial correlation and step-wise regression. The findings showed that the three factors, socio-economic status, prior-achievement and teacher experience, correlated significantly and positively with academic achievement.

Trivedi, S. (1988), studied scholastic achievement of adolescent children of working and Non-working Mothers. The sample of the study consisted of 120 students (60 each) of working and non-working mothers. The children of classes IX and XI were included in the sample. A Questionnaire was used to collect data. Marks of High school and Junior High school were taken as a measure of academic achievement. To analyze the data, mean, standard deviation and t-test were used. The results of the study were: (i) The achievement scores of the children of working and non-working mothers were not significant (2) The difference between the achievement scores of the children of educated and uneducated mothers was not significant.

Broxie, G. J. B (1988) studied parental participation in homework completion. The sample of this descriptive field study consisted of 58 4th, 5th and 6th grade students and their parents. The parents & students were interviewed in their home setting. As a measure of academic achievement school records were considered. The data were analyzed using statistical discriminate analysis techniques. The results concluded that parental assistance is a good predictor of student grades.

Austin, C. A (1989) studied 'home work as a parental involvement strategy to improve the achievement'. The subjects were 77 first

grade children enrolled in an urban elementary school and their parents. The researcher tried to show that achievement of the students could be increased by parent aided homework. One group of parents received 'systematic parent aided home work' for their children and attended the school meetings and the other group was the control group. To analyse the data, Pearson's product moment correlation was used. The study concluded that (i) Completion of Parent aided home work is moderately related to academic achievement, (ii) The parent/home work intervention program improved parents' understanding of their child's educational strengths & weaknesses.

Ganguly, M. (1989) studied the relationship between socio-economic status and scholastic achievement. 400 students of class VIII of Birbhum district were taken as sample. The tools used were: (i) Kuppuswamy's Socio-economic status for urban sample (ii) Kulashrestha's SES scale for rural sample. The result showed that in both urban and rural areas the upper SES group had done significantly better than the lower SES group in achievement tests in all the three groups of subjects i.e. Science, Language and Humanities.

William, B (1989) reviewed the correlates of academic achievement. The research literature suggests that frequent parental knowledge of their child's academic achievement is necessary. Parents who are provided with frequent feedback about their child's academic achievement, along with a systematic method to manage their child's achievement, may be able to improve achievement in the absence of any systematic in-school intervention.

Harris, A. J. (1990) studied the relationship between parent involvement in their children's academic achievement. Samples are drawn from grade three, five and eight students. The tools used were student Home work survey questionnaire, Comprehensive Assessment Test (CAT), Comprehensive Tests of Basic Skills (CTBS) for grade eight. Correlations were done to analyze the data. The findings of this study do not show that students' perceptions and attitudes toward parent involvement in academic home work and academic achievement are significantly correlated.

Bhouraskar, S. (1992), studied the relationship of academic achievement of the students to their intelligence, SES and adjustment. The sample consisted of 183 students of 8th grade Cattell's culture fair intelligence test, Dr. Y. K Mittal's adjustment inventory, SES information schedule developed by Nirmala Mahapatra were the tools used by the researcher. A positive correlation found between intelligence and academic achievement. No significant relationship was found between academic achievement and SES.

2.4.1 Methodological Trends in Researches on Home and Academic Achievement.

Tools used

To measure the different components of home, different types of questionnaires, personal information bank, interviews were used. To measure the socio-economic status Kuppuswamy SES scale, Nair's Socio-Economic Scale, Kulashrestha SES scale, SES information schedule by Nirmala Mahapatra were used.

Out of 24 reviewed studies, only in two studies (Perkins 1980, Harbin kemp 1985) Standardized achievement tests were used. In rest of the cases school result was considered as a measure of academic achievement.

Methodology

Out of 24 reviewed studies, in eight cases, samples were drawn from primary schools. In rest of the cases samples were drawn from Secondary School level.

As statistical technique in most of the cases t-test, correlation and multiple regression analysis were used. Four of the studies were experimental in nature, rest of them were survey type. All of the studies were quantitative in nature.

Findings

Courset (1979), Salunke (1979) Winegar (1984), Claude (1986), Al-Hamid (1987), Massey (1987), Harbin (1985), Broxie (1988), William (1989) found father's reading habit, educational facilities, emotional happiness, psycho-educational variables, ability, parents expectation and roles in the educational activities, parental knowledge of their childs academic achievement etc. have positive and significant correlation with academic achievement.

Ojha (1979), Khanna (1980), Homchaudhuri (1980), Sutradhar (1982), Razouki (1987), Ganguly (1989) found positive correlation with Socio-economic status and academic achievement. Salunke (1979) found no correlation with socio-economic status and academic achievement.

TABLE : 2.3   SUMMARY OF THE REVIEW OF RESEARCHES ON HOME AND ACADEMIC ACHIEVEMENT

Year	Author	Sample Size	Nature of the Research	Tools & Techniques used	Analytical Technique	Findings
1979	Courset, G.C.	Level: 3rd graders	---	---	---	1. Father's reading habit had a strong relationship for boys.
1979	Salunke, R.B.	673 students Level: University students	Survey & Quantitative	1. Kuppuswamy SES scale. 2. Home environment 3. Economic management questionnaire	1. Mean, standard deviation 2. t-test and correlation	1. Educational facilities, economic management, emotional happiness contributed positively to academic achievement but SES did not.
1979	Ojha, K.P.	1050 students Level: XI	Survey & Quantitative	1. Personal information bank	1. Correlation	1. Parental education, occupation, income were related to academic achievement.
1980	Khanna, M.A.	1000 students Level: VI, VII, VIII	Survey & Quantitative	---	1. Chi-square 2. Correlation	1. Socio-economic status was positively and significantly related with academic achievement.
1980	Honchaudhuri, S.	459 students Level: Pre-University	Survey & Quantitative	1. Who am I? 2. Socio-economic status and family influence scales 3. Sinha's anxiety scale	3. Means, standard deviation. 2. t-test and correlation 1. multiple regression	1. Self concept and Socio-economic status came out as a significant correlate of academic performance.
1980	Perkins, I.W.	400 students	Experimental & Quantitative	1. Parent interview form. 2. Lowa Test of Basic Skills	t-test and point biserial correlation	1. No difference was found between parental attitude toward education and students' achievement.
1980	Vijayalakshmi, J.	425 students Level: Secondary school	---	1. Nair's Kerala University Test of Creative Thinking 2. Nair's Socio- economic scale	t-test	1. Significant difference was found between high creative and low creative both in academic achievement and in socio-economic status.

Year	Author	Sample Size	Nature of the Research	Tools & Techniques used	Analytical Techniques	Findings
1981	Smith, M.K.	481 children Level: Kinder garten	---	---	---	1. Teacher's expectations affected the performance of the children than mother's expectations.
1982	Sutradhar	200 students Level: School	---	---	---	1. Socially advantaged children were always superior than the disadvantaged children in academic achievement.
1984	Brodie, R.H.	32 students Level: First grader	Experimental & Quantitative	---	Correlation	1. Moderate correlations, were found among play materials, home and academic achievement.
1984	Winegar, J.S.	136 boys Level: 4th, 5th, 6th grade	---	1. WISC-R 2. Children' Report of Parental Behavior Inventory (CRPB)	Regression analysis	1. Psycho-educational variables, handwriting, students age were found related with school achievement.
1985	Harbin-Kemp. M.L.	Level: 6th grade students & their parents	---	1. Self-report questionnaire 2. SRA assessment survey to measure achievement.	1. Correlation 2. Step-wise regression	1. Low correlation was found between parental involvement and achievement. 2. Ability was the best predictor of academic achievement.
1986	Thomas, D.C.	Level: 7th grade	Experimental & Quantitative	Three homework approaches were applied.	Multivariate analysis of variance	1. Attitudes toward homework, study habits, assigned home work over a 12 week period were not significantly affected the academic achievement.
1987	Al-Hamid, Y.M.	430 teachers, 72 administrator	Survey & Quantitative	Questionnaire	---	1. Primary school teachers and administrators agreed that parents playing various roles in the educational activities.
1987	Massey, E.P.	33 students Level: grade 5 students	Survey & Quantitative	Interview	Multiple regression analysis	1. Significant relationship were found among adult-child interaction, parental aspirations and achievement.

Year	Author	Sample	Nature of the Research	Tools & Techniques used	Analytical Techniques	Findings
1987	Razouki, A.A.	Level: 12th grade	---	---	1. Correlation co-efficient 2. Partial correlation 3. Step-wise regression	Socio-economic status, prior achievement, teacher-experience were correlated significantly and positively with academic achievement.
1988	Trivedi, A.	120 Students Level: IX and XI grade	Survey & Quantitative	Questionnaire	Mean, standard deviation, t-test	No significant relationship were found among the academic achievement of the children of working - non working educated - uneducated mothers.
1988	Broxie, G.J.B.	58 students Level: 4th, 5th and 6th grade	Survey & Quantitative	Interview	Statistical discriminate analysis techniques	Parental assistance are good predictors of academic achievement.
1989	Austin, C.A.	77 students & their parents Level: 1st grade	Experimental	---	Pearson's product moment correlation	Parent-aided home work is moderately related to academic achievement.
1989	Garguly, M.	400 students Level: grade VIII	Survey & Quantitative	1. Kuppuswamy's Socio-economic status for urban. 2. Kulashrestha's SES scale for rural sample	---	Upper SES group has done significantly better than the lower SES group in academic achievement.
1989	William, B	---	Idiographic study	Review	---	The research literature suggests that frequent parental knowledge of their child's academic achievement is a necessary
1990	Harris, A.J.	Level: III, V, VIII grade	Survey & Quantitative	1. Home - work survey questionnaire 2. Comprehensive Assessment Test (CAT) 3. Comprehensive Test of Basic Skills (CTBS)	Correlation	No significant relationship between academic achievement and students' attitudes toward parent involvement in home work was found.
1992	Shalini, B.	183 students Level: 8th grade	Survey & Quantitative	1. Cattell's Culture fair intelligence test 2. Dr.Y.K. Mittal's adjustment inventory 3. SES information schedule developed by Nirmala Mahapatri	Correlation	No significant relationship was found between academic achievement and SES.

2.5.0 REVIEW OF THE STUDIES ON SCHOOL AND ACADEMIC ACHIEVEMENT

Hoffman, G. L (1980), compared the average daily rates of performance of pupils when different numbers of teachers were in the same classroom. In a 20 pupil kindergarten, reading and arithmetic performance rates and time on task increased and decreased as the number of teachers increased and decreased through a range of one, two and four. Similar but diminished effects were observed in 3rd grade reading & spelling with one, two, four & eight teachers. The result proved that smaller class size improves pupil performance.

Rao, K. S (1982), studied the influence of continuous evaluation on learning in school. The sample comprised 800 students in science and 641 in mathematics in standard V of public and central schools in South Delhi. Nine achievement tests were administered both in science and mathematics. The tests were based on Bloom's taxonomy of educational objectives in order to find out whether continuous evaluation of different objectives were differently affected by letter grades and teacher comments. Before the achievement tests were administered, Progressive Matrics and Torrance Tests of creative thinking were used to match the control and the experimental groups. To analyze the data, t-test, F-test and factor analysis were done. The important findings were: (i) Frequent testing had positive influence on learning under normal school situation, (ii) There was no difference in letter grades and teacher comments as reinforcements, (iii) children whose fathers belonged to high

education and high income groups performed better in science.

Pal, G. (1982) investigated the different factors involved in the learning of science subjects. 200 students from eleven schools in Calcutta and its vicinity were selected by incidental sampling. Guilford's problem solving ability test in Arithmetic, Ballard's Three Minutes Arithmetic test, science achievement test were administered. For analysis, correlation matrix and centroid factor matrix were done. The major findings were: (i) Good schooling, interest and industriousness played an important role in the learning of science (ii) students belonging to the advanced schools had done better in science achievement test than those in less advanced schools having the same or more or less identical general ability.

Wagner, A. M (1984) investigated the relation between school achievement and teacher's questioning styles and method of instruction. The sample was drawn from 178 students of 4th and 5th grades. The two methods used were: (i) an inquiry approach, (ii) a reading recitation approach. Achievement gains were measured in the process skills of school and in knowledge. The experimental design was a pre-test, post test experimental group, control group type. Regression lines for each test in each class and estimated gain scores were calculated. Analysis of variance and co-variance were used in this study. The finding was that difference in questioning styles did not make any difference in academic achievement.

Slocum, E. A (1986) studied the relationship between the level

of student participation in major extracurricular programs and academic achievement. A total of 180 students of high schools were involved in the study. An ex-post facto causal comparative research design was used to investigate the relationship. Analysis of variance and Scheffe's post hoc comparison were done to analyse the data. The findings ofthe study were: (i) Grade Points Average (GPA) of students involved in one major extracurricular program were significantly higher than for students involved in zero programs (ii) GPA's of students involved in two or more major extracurricular programs were significantly higher than for those involved in one program.

Tenoschok, M. J (1986) tried to determine what factors other than SES may be related to a school's performance. Sample consisted of 225 schools, six top and six bottom outliers. Six top and six bottom outliers were selected for further study. Tenoschok Inventory of school operational practices questionnaire was administered to collect data. t-test demonstrated significant differences on 13 factors between effective & ineffective schools. The factors were high academic time, high attendance rates, variety of instructional methods, sample resources, academic climate, high expectations, parent teacher relations, collaboration, directed instruction, frequent evaluations, positive learning climate, locus of control and strong leadership.

Malova, A. O (1987) studied a case study of the effectiveness of schools. The samples were drawn from secondary schools of Kenya.

A total of 320 students, 206 teachers and 12 headmasters were drawn from the selected (by random selection) schools. Chi-squares, multivariate analysis (step-wise & multiple regression analysis) were used in testing the hypotheses. The findings were: (i) school discipline, selection of the students, teachers' confidence in leadership of the school etc. have a bearing on how students perform in national examination. (2) school facilities including better qualified teachers contribute significantly toward performance on national examination (3) students from affluent homes have a better chance of performing well on national examinations.

Smith, M. E (1987) studied to explore perceived causes of academic failure from the student's perspective and to compare them to teacher perspectives. Data was gathered from 176 secondary teachers and administrator and 4,252 students. It was concluded that there are similarities between teacher and student perceptives of perceived causes of academic failure and that secondary students' perception of causes of academic failure changes as the students progress through grade levels.

Verma, B. P and Sharma, J. P (1987) compared academic achievement of adolescent students possessing independent and dependent learning styles. 120 adolescent students of both the sexes studying in secondary, higher secondary schools were taken as sample. The tools used were: (i) The group test of general mental ability, (ii) student learning styles questionnaire. t-values were computed to measure the significance of difference.

The findings of the study were: (i) Participant learning style appears to.be superior as compared to avoidant learning style in various school subjects. (ii) The mean achievement of students belonging to dependent learning style group is better than that of independent learning style group. (iii) No significant difference in any subject in respect of competitive & collaborative learning style groups.

Rivera. A. (1988) studied the effect of half day and full day schedules on the academic achievement of Kinder garten children. The sample consisted of 100 subjects. The research design used were quasi-experimental approach. t-test was used to compare the two groups of children. The findings suggested that there was greater academic achievement in languages, mathematics and reading for full-day teaching schedule than for half-day schedule.

Barber, H. E (1988) studied the relationship between class size and academic achievement and the effect of grade level on this relationship. The sample consisted of 193 groups of students in small and large classes from grades three, six and eight. To measure achievement, Comprehensive Test of Basic skills (CTBs) in Reading, Language, Mathematics and science were used to measure achievement. t-test and analysis of variance tests were conducted to determine the relationships. The results showed statistically significant differences in favour of small classes in grades three and six. The differences at the third grade seemed greater than those at the sixth grade. At the eight grade

level, the analysis found a statistically significant difference only in language.

Shortt, T. L. (1988) studied teacher classroom behaviour and their effects on student achievement in secondary schools. The sample consisted of secondary school teachers. Two groups of teachers were taken project & non-project teachers. The data were analysed both qualitatively and quantitatively. Quantitative analysis revealed that students of project teachers scored statistically higher then the students of non-project teachers. In qualitative analysis it was shown that (i) project teachers exhibited components of Rosenshine's Direct Instruction Model more frequently than did the non-project teachers. (ii) students of project teachers were more academically engaged during allocated instructional time than students of non-project teachers.

Butler-por, N (1989) studied the phenomenon & treatment of academic achievement in children of superior & average abilities. An intervention programme was conducted at the primary school level by class, teacher, based on individual diagnosis and treatment. The intervention followed theory of Reality Therapy. 12 weekly meetings between pupil and teacher were held in which tasks & rewards for the coming week were chosen and previous accomplishments evaluated. It was found that (i) most pupil improved, (ii) the gifted pupils chose more varieties of tasks and fewer rewards than did average ability ones.

Starr, W. D (1989) studied the relationship between the level of effective schools characteristics and the level performance of the students (in terms of the socio-economic status of the students). The study sample consisted of 12 low, 23 middle and 14 high SES status level schools. School effectiveness characteristics were measured by administering a questionnaire. Students' basic skill achievement was measured in reading, writing & mathematics. Pearson product moment correlation was calculated. The data obtained were analyzed. A low to moderate relationship between school effectiveness characteristics & student basic skill achievement was found.

Mukes, S. L (1989) studied relationship between students' absence from school & students' performance. The sample consisted of 500 students from elementary school. Path analysis was used to analyse the data. Small but significant relationship were identified in simple correlations.

Saleh, W. E. (1989) studied to explore the effectiveness of manipulative materials in mathematics achievement. The sample were drawn from 15 Grade 1 children and 48 Grade 2 children. The children were divided into four treatment groups, the treatments were: (i) manipulative materials, (ii) concrete aids, (iii) pictorial aids, (iv) a combination of concrete & pictorial aids, (v) no aids at all.

The children were tested immediately after instruction. The tests were on error patterns, correct answer, understanding, transfer and retention of knowledge. The principal findings of the research was that the effects of manipulative materials

appear to vary depending on the children's sex, their prior knowledge, the instruction time and the number of different aids used.

Linzy et al (1990) Studied the relationship between school climates and student achievement. This study compares the relationships between the independent variable school organizational climate and the dependent variable student achievement. Rensis Likert's Profile of a school (POS) instruments measured organizational climate. The responding groups were parents, teachers, principal and students. The students were taken from grade 5, 7 and 9. Descriptive statistics analysed High/Low groups by individual and combined grades (7,9) and total grades (5,7,9). t-test statistic and multivariate analysis and F-statistic were used. Significant difference was found between a HIGH/LOW group causing rejection of the null hypothesis of no significant relationship between any school climate variable and academic achievement.

2.5.1 Methodological Trends in Researches on School and Academic Achievement

Tools used

To measure the different components of school, different types of questionnaire, inquiry, interviews, meeting were used.

Except in one or two cases, school result was considered as a measure of academic achievement.

Methodology

Out of 17 reviewed studies, in 8 cases samples were drawn from primary schools. In rest of the cases samples were drawn from secondary school level.

The most frequently used statistical techniques were: t-test and analysis of variance. Factor analysis were done in two cases. Path analysis and step-wise regression were done in one or two cases. In only two studies analysis of data were done both qualitatively and quantitatively; rest of the studies were quantitative in nature.

Findings

Hoffman (1980), Barber (1988) found small class size had positive correlation with academic achievement. Rao (1982) found frequent testing, Pal (1982) found good schooling, Malova (1987) found school discipline and selection of students, Verma (1987) found participant learning, Butter (1989) found individual diagnosis for learning as positively correlated with academic achievement.

TABLE : 2.4 SUMMARY OF THE REVIEW OF RESEARCHES ON SCHOOL AND ACADEMIC ACHIEVEMENT

Year	Author	Sample Size	Nature of the Research	Tools & Techniques used	Analytical Techniques	Findings
1980	Hoffman, G.L.	20 students Level: Kinder Garten	Experimental & Quantitative	---	---	Smaller class size improves pupil performance
1982	Rao, K.S.	1441 students Level: Standard V	Experimental & Quantitative	Ninie achievement tests were administered	t-test, F-test and factor analysis	1. Frequent testing had positive influence on learning. 2. No difference was found in letter grades & teacher comment as reinforcement
1982	Pal. G.	200 students Level: School	Survey & Quantitative	1. Guilford's Problem solving ability test. 2. Ballard's Three Minutes Arithmetic test. Science test	Correlation Matrix centroid factor matrix	Good schooling, interest and industriousness played an important role in learning of science subjects.
1984	Wagner, A.M.	178 students Level: 4th and 5th grade	Experimental & Quantitative	Inquiry approach and reading recitation approach were taken.	Analysis of variance and covariance	No real difference was found between the questioning styles of teachers & academic achievement.
1986	Slocum E, A.	180 students Level: High school	Experimental & Quantitative	---	Analysis of variance and scheffe's post hoc comparison were done	Grade Point Average (GPA) for students involved in major extracurricular programs were significantly higher than for those students who were not involved in any program.
1986	Tenoschok, M.J.	225 students	Survey & Quantitative	Tenoschok Inventory of school operational practices questionnaire	t-test	Significant differences were found on 13 factors between effective & ineffective school. The factors were, high academic time, high attendence rate, variety of instruction methods, ample resources, academic climate, high expectations, parents teacher relations, collaborations, frequent evaluations, direct instruction, positive learning climate, locus of control & strong leadership.

Year	Author	Sample Size	Nature of the Research	Tools & Techniques used	Analytical Techniques	Findings
1987	Malova, A.O.	322 students, 206 teachers & 12 head masters Level: Secondary school	Survey & Quantitative	---	Chi-squares, step wise and multiple regression analysis were used.	School facilities, school discipline, selection of students, teachers' confidence in leadership of the school etc. have a bearing on students academic achievement.
1987	Smith, M.E.	4252 students, 176 teachers & administration level.	Survey & Quantitative	---	---	Similarities found between the teachers and students perceptive of perceived causes of academic failure.
1987	Verma, B.P. and Sharma, J.P.	120 students Level: Secondary & Higher Secondary level	Experimental & Quantitative	1. Student learning styles questionnaire 2. The Group Test of General Mental Ability.	t-test	1. Participant learning style was found superior than avoidant learning style. Dependent learning style was found superior than independent learning style. 2. 3. No difference was found between competitative & collaborat learning style
1988	Rivera, A.	100 students Level: Kinder garten	Experimental & Quantitative	---	t-test	Greater academic achievement in languages, mathematics and reading for full day school than for half day KG students were found.
1988	Barber, H.E.	193 students Level: grade III, VI, VIII	---	Test of Basic skills.	t-test, analysis of variance	Statistically significant difference found in favour of small classes in lower grades.
1988	Shortt, T.L.	Secondary School Teachers	Survey & Both Quantitative & Qualitative	---	Qualitatively and quantitatively.	Both quantitative and qualitative analysis revealed that students of project teachers showed better performance in every aspects than the non-project teachers.
1989	Butter-por, N.	Level: Primary School	Experimental & Qualitative	12 weekly meetings between pupil and teacher	Individual diagnosis and treatment based on theory of Reality Therapy.	Most pupil improved their academic achievement by the treatment.
1989	Starr, W.E.	49 students Level: School	Survey & Quantitative	Questionnaire	---	A low to moderate relationship between school effectiveness characteristic and student basic skill achievement.

Conta.

Year	Author	Sample Size	Nature of the Research	Tools & Techniques used	Analytical Technique	Findings
1989	Mukes, S.L.	500 students Level: Elementary	Survey	---	Path analysis	Small but significant relationship were identified between student's absence from school and student's performance.
1989	Saleh, W.E.	63 students Level: Grade 1 & 2 children	Experimental	Tests were on error patterns, correct answer, understanding, transfer & retention of knowledge	----	Effects of manipulative materials appear to vary depending on the children's sex, their prior knowledge, the instruction time & the number of different aids used.
1990	Linzy et al	Level: Grade 5,7 & 9	Survey	Rensis Likert's Profile of school (POS)	t-test, multivariate analysis, F-test	Significant difference was found between high and low group.

Note : .... Information was not available

2.6.0 THE RESEARCH GAP IDENTIFIED AND THE RATIONALE OF THE PRESENT STUDY

THE RESEARCH GAP

A total of 57 researches on factors of academic achievement were reviewed in the earlier section. The review has highlighted certain trends in the use of (i) variables or correlates of achievement and (ii) research tools and methodologies.

1.   Variables studied in the previous researches:

The various factors or variables used in the previous researches may be categorised into three groups; (a) Individual, (b) Home, and (c) School. The 'Individual variables' are those that relate to the student's individual attributes and characteristics, namely; motivation, creativity, intelligence, personality etc. The second group, 'Home' includes the relevant characteristics of the family and home environment, such as parent's educational level, occupation, income, educational facilities at home, parents attitude toward education etc.

The last group includes various features and characteristics of the school, such as; facilities, administrative systems, examination systems, qualifications of the teachers, etc.

Most of the previous researches reviewed here dealt with only one group of variables; and within that group, very few variables were generally considered. Most often, the variables considered were either a few Individual variables or Home variables. Very few researches investigated the impacts of the school variables on academic achievement. Moreover, those who

did study the school variables did not differentiate the various types of schools; and usually focussed their attention on secondary schools and colleges; primary schools were left out of everyone's attention.

In many cases the variable defined by the investigators were complex concepts, such as Socio-Economic Status (SES), which are divisible into more discrete and better measurable units.

2.   **Tools and Methodologies used**

Almost all investigations relied on quantitative analysis of data; however sophisticated statistical techniques were rarely used. Anand and Padma (in Buch 1987) evaluated this aspect in the following language. "The researcher selects some variables to study their relation with achievement, selects suitable tools, administers them to some available sample, and collects the required data. This he mostly subjects to correlation techniques or at best analyses of variance. Even the sophisticated techniques of factor analysis or co-variance are rarely used".

One common methodological approach taken by most researches is the acceptance of school examination results as the measure of academic achievement. This is a questionable methodology for two reasons. First, the standard of examination questions and evaluation varies from school to school. Therefore scores received in two different schools cannot often be compared. This is why most countries have instituted nationally based school final examinations. The second reason is that wherever the school

teachers are engaged as private tutors, there is a possibility of the school examination system being biased. It is desirable, for the sake of objectivity of the findings, to use standard tests in the research.

RATIONALE OF THE PRESENT STUDY

The above discussion point to need for further research on the subject and also provide a conceptual framework for the required line of investigation. The following paragraphs outlines the salient features of the study and their significance.

One: In contrast to most of the previous studies, this will be a comprehensive research in which all three groups of variables (Individual, Home and school) will be considered together. On the other hand, in place of complex variables, the study will use discrete variables. For example, Socio-economic-status (SES) will be replaced by a number of more specific variables such as Father's Education, Mother's Education Father's Occupation and Mother's Income. These discrete variables may individually have different influences on child's development.

Two: Some variables which will be included in this study were rarely or never studied (to the knowledge of the researcher) before in the context of academic achievement. These variables are creativity, Nutritional level and Home Tutor (i.e who teaches at home), teachers and student behaviour in classroom situation.

Three: The proposed study will focus on the primary grades of educational institutions which have been largely overlooked by

the previous researches. It is not enough to know the impacts of the variables on secondary grades, because the same factors may have quite different amounts of impact on students at different grades. It is therefore very important to know how these factors can influence the students of the primary grades who are at an early stage of mental and educational development. If the schools have any impact, the achievement curve at grade five would be different from the curve at grade one, because grade five students have had longer period of schooling. In order to investigate into this aspect, all the five primary grades will be covered in this study.

Four: Instead of taking school examination results as measures of academic achievement, this study will measure achievements on the basis of standard tests to be administered by the researcher. Also, instead of relying on performance in only one academic subject, the students will be evaluated in all major subjects. In Bangladesh the major subjects at the primary stage are Bengali, English, Mathematics and Environmental studies. Adoption and adaptation and modification of standardized tests and other research tools, such as questionnaires on motivation and home environment, evaluation criteria for school teachers and principal will be another contribution of this study which may benefit future researchers in Bangladesh.

Five: It is anticipated that different types of schools offer quite different academic environments to the pupils which ultimately reflect on their mental and educational development.

In Bangladesh, there are mainly three types of schools: (i) Bengali-medium government schools (ii) Bengali-medium non-government school and (iii) English medium non-government schools. The study will look into the differences in levels of achievement and impacts of different variables in government and non-government Bengali medium schools. English medium schools are excluded because their separate curricula and medium of instruction make it impossible to administer a common set of standard tests.

Six: Sophisticated statistical techniques including univariate and multi-variate analyses will be applied. Univariate analysis shows the effects of each variable on the academic achievement, while multi-variate analysis reveals most significant relationship, which help in identifying the most important variables.

Seven: Many factors, such as behaviour of teachers and students in classroom situation, are not easily amenable to quantitative analysis. For this reason this study takes two different approaches of investigation, namely, quantitative and qualitative. Use of two approaches also provides a reliable means to double cheek the significance of the common variables.

2.7.0   CONCLUSION

The present review of related literature is done only on the studies which were done during the year 1978 to 1993. The review is followed by summary of the studies and the methodological trends in research of the studies, which may help the readers to

gain knowledge about the methodology, tools used and findings of the studies at a glance.

In the review of the studies it was seen that some researchers found a particular variable to be related to achievement, other researchers found just the opposite. Some times the results were inconclusive. The reasons for the contradictory and unexpected findings may be due to (i) the use of improper tools (ii) inadequate samples (iii) lack of control of the other variables related to the study (iv) improper statistical technique etc.

In the review it is seen that most of the studies were implemented at the secondary school level. Relatively less number of studies were done at the primary school level. Field studies related to primary school of Bangladesh were hardly done. Therefore it appears there is a need to study how these variables are related at primary school level and the present study is an attempt in this direction. In the next chapter, the plan and procedure of the study along with the objectives, hypotheses, design and limitations of the study will be discussed.