

CHAPTER-II

RELATED LITERATURE AND RESEARCH : REVIEW

CHAPTER- II
RELATED LITERATURE AND RESEARCH :
A REVIEW

SECTION - I

**PART-A : THEORETICAL LITERATURE ON TEACHING
APTITUDE**

PART-B : RESEARCH STUDIES ON TEACHING APTITUDE

SECTION- II

**PART-A : THEORETICAL LITERATURE ON ACADEMIC
ACHIEVEMENT**

**PART-B : RESEARCH STUDIES ON ACADEMIC
ACHIEVEMENT**

CHAPTER- II**RELATED LITERATURE AND RESEARCH :
A REVIEW**

'Every research work should be based on all relevant thinking and research that has proceeded it. When completed it becomes a part of the accumulated knowledge in the particular field and so it contributes to the thinking and research that follow. For any specific research work to occupy this place in the development of discipline, the researcher must thoroughly be familiar with previous theory and research.'

(Fox, 1969)

This chapter on review of related literature consists of two sections. The Section-I, part-A deals with theoretical literature on teaching aptitude and part-B deals with research studies on teaching aptitude. Section-II, part-A deals with theoretical literature on academic achievement and part-B deals with research studies on academic achievement.

SECTION - I**PART- A****THEORETICAL LITERATURE ON
TEACHING APTITUDE****NATURE AND ORIGIN OF APTITUDE**

The term 'aptitude' is generally used in either of the two ways: (i) When we say that a man has a great deal of aptitude for art, meaning that he has in a high degree many of the characteristics which make for success in artistic activities (ii) When we say that a person lacks spatial aptitude, meaning that he lacks this specialised ability which is of varying importance in a number of different occupations. The word 'aptitude' is intended to convey the ideal of a discrete, unitary characteristic which is important in varying degree, in a variety of occupations and activities. Both these concepts of aptitude are important in vocations; however the meaning intended should be clear.

Any one who is to become a teacher needs an intellect capable of grasping not only the subject matter and its place in the curriculum but also the aims and processes of education. Assuming that the candidate is bright, that he learns readily and

assimilates thoroughly what he studies, the question still remains as to the likelihood that he can also teach others. This aptitude sometimes reveals itself when classmates come to him for help. If he enjoys explaining difficult points, if he succeeds in finding ways of clarifying obscurities so that his fellows increasingly turn to him, this fact alone suggests that he probably has some aptitude for teaching.

Aptitude is the capacity to learn readily and achieve a high level of skill in some specific area. An aptitude test is designed to measure a sample of performance. Some tests of special aptitudes are of the pencil and paper variety while other require actual manipulation of test materials. Many jobs require a certain group of aptitudes or aptitude factors. Aptitudes are not necessarily inborn, although some may depend to a certain extent upon inborn characteristics. General intelligence is a more important aspect of some aptitudes than others. Some occupations require certain intelligence factor more than others. For most occupations one can specify a minimal intelligence level. Interests are always relevant, since the individual is more likely to succeed in occupations which interest him than in these which do not.

A certain degree of success has been achieved in measuring aptitudes for music and the graphic arts, but much more needs to be done in these areas. The college student who has shown aptitude for mathematics is likely to be more than usually competent in physics or engineering. In case like these, transfer of training is brought about by the common demands of the different sports, studies or other activities.

One person has greater aptitude than another for some job. It is neither imply that aptitude is inborn nor that it is acquired. It is in all probability dependent upon both heredity and what we have learned. We want the facts about a person's aptitudes as they are at present, characteristics now indicative of his future potentialities. Person's potentialities at the period of his development are quite certainly the products of interaction between conditions both innate and environmental. His capacity for gaining manual skills, his intelligence, his emotional makeup, his moral character, indeed all aspects of his personality, are in varying degrees subject to limitations that have been imposed by opportunities for growth and exercise, as well as by his original nature.

From this aptitude and present ability do not the same thing e.g. person may have no present ability to fly a plane, but it may have a high degree of aptitude for flying which means that person have chances of being a successful flyer are good, provided it receives the proper training. The chief value of aptitude testing is, in fact, that it enables us to pick out from those who do not yet have the ability to perform certain skills those who, with a reasonable amount of training, will be most likely to acquire the skills in question and acquire them to a desirable level of proficiency.

(Introduction to Psychology, Norman, L.M., P.116)

MEANING OF APTITUDE

"A condition or set of characteristics regarded as symptomatic of an individuals ability to acquire with training some knowledge, skill or set as responses such as the ability to speak a language, to produce music etc." It is defined in Warren's Dictionary, it is the present condition, tendency of the body mind that may be taken as an indication or symptom of the future possibilities. An aptitude test does not directly measure future accomplishment. It makes no such pretence. It measures present performance which is symptomatic of future accomplishment.

Aptitude does not merely cannot the potential ability in performance. A man has the musical aptitude. It shows his ability to acquire proficiency and his readiness to develop an interest in exercising that ability. A man may teach efficiently but if he has no interest in teaching, it means that he has no aptitude for teaching. Aptitude for teaching is not an existential object, extraneous to the person, possessed by him. It is an integral aspect to him as a person though we speak of the aptitude as something which the person has, rather than as an attribute of what he is following many terms are related with the aptitude.

Ability

It is the power to perform responsive acts. The amount of a person's ability is ordinarily expressed in terms of the difficulty or complexity of the tasks he can perform. A person with musical ability, can sing well either at the present time or after getting some training ability demands practice, but the ability to do something cannot be developed, unless one has ^{an} aptitude.

Proficiency

In case, the individual is now ready to have a musical performance, his ability is called proficiency which thus refers to the degree of ability already acquired.

Capacity

It means potential ability. The person's musical capacity is the high is limit, which he can reach after practice.

Talent

It is a relatively high order of aptitude. A talented person is easily susceptible to an unusually high degree of training.

Achievement

It is the degree of knowledge or skill attained by an individual as a result of training or experience. It depends on the ability, which in turn depends upon the aptitude.

Theory of Aptitudes

1. An individual's potentialities are not all equally strong. One can do certain things more easily and better than other things and develop greater interest and satisfaction in some kinds of activity than in others. If this is not so, an individual should be equally successful or equally worse in all occupations.
2. Individuals differ one from another in their potentialities. People do not all inherit the same endowments nor develop

equally. With respect to almost any measurable ability or trait such as memory span, spatial threshold, pitch discrimination, educability, reaction time, all of us differ from one another. In the absence of any such differences, individual X will be as good as individual Y, for a particular job.

3. Many of these differences are relatively stable. If a student shows considerable artistic ability and negligible musical talent today, we should not expect sudden change in the reverse direction, in these aptitudes in course of time; of course a person will not in all respects, be exactly the same tomorrow as he is today. Favourable opportunities may encourage the ripening of latent talents, now unsuspected while other aptitudes may lapse through lack of time exercise. The changes do take place in the relative potency of these factors, but they are rarely sudden and they occur within limits.

(Fundamental of Experimental Psychology - W.N. Dandekar, P.351)

Intelligence and Aptitude

Every profession requires a minimum level of intelligence. If the candidate is below that level, he cannot be recommended for

that profession. In conferring with persons who lack confidence in themselves or who are subject to feelings of inferiority, it is especially desirable that they be encouraged to try occupations in which they will not be out classed but will probably be able to excel. Nothing discourages a sensitive person more than the realization that he is lagging behind his coworkers, in his daily work.

Interest and Aptitude

Human behaviour is so complex that it is very difficult to predict success in an occupation as many factors contribute towards the achievement, in any field. Many intelligent persons, having the necessary ability, sometimes fail mainly because there is the lack of desire to work. Thus desire is related to interest.

Interest may be defined as a tendency to become absorbed in an experience and to continue it, while aversion is a tendency to turn away from it to something else. Both are dynamic. It is the nature and strength of these tendencies which are important in guiding the students. Thus the capacity to develop interest, in doing a job, is a vital constituent of aptitude. Interest is not only a symptom of aptitude, but it is the very essence of it.

Different Types of Aptitudes and Aptitude Tests

1. Manual Aptitude

This aptitude is necessary in many manual occupations or semi-skilled occupations. To succeed in a semi-skilled occupation, the first requisite may be an aptitude for acquiring manual skill, for learning to do the operations rapidly and deatrously. The worker has not to think in any way for solving any problem e.g. packers, wrappers, polishers. The quickness and apparent ease of movement are important.

O' Connor's Finger Dexterity Test

It consists of 300 standard metal pins, an inch in length and a metal plate with one hundred holes, each large enough to take easily three of these pins. It measures the speed with which a worker can pick up and place the pins in the holes.

2. Mechanical Aptitude

This is essential in skilled trades, in which the worker has not only to make movements but he has to think through the problems as they arise. A skilled trade demands the ability to solve problems. Sense of form, ability to visualize three dimensional

structure, perception of spatial relations are some of the powers which the worker brings to bear upon the problem.

Minnesota Mechanical Assembly Test

It measures a person's ability to put together the parts of mechanical devices e.g. a bicycle bell, radio switch, an expansion nut, safety razor. Thirty three disassembled mechanical contrivances are used. Facility in correctly assembling these devices is related to mechanical intelligence. It serves as an aptitude test for such trades as wood workers, iron worker, machinist, tool-maker, sheet metal worker and automechanic.

Minnesota Paper Form- Board Test

This test presents sixty four problems on paper only. It does not permit manual manipulation but mental manipulation of geometrical patterns in two dimensions. Ability not only to perceive the spatial relations of objects but to think correctly about these relations, is obviously an important factor in mechanical aptitude.

3. Clerical Aptitude

Four kinds of abilities are essential for clerical occupations :

- i) Perceptual : ability to observe words and numbers, to see instantly and correctly on the paper.
- ii) Intellectual : ability to grasp the meanings of words and other symbols and to make correct decisions regarding the questions they raise.
- iii) Various mental skills : ability to add and multiply, to spell correctly, to punctuate etc.
- iv) Motor : ability to manipulate with fingers the various papers, cards, typewriter, comptometer etc.

Minnesata Vocational Test for Clerical Workers :

Performance in the number-comparison and word comparison tasks, set by this test, furnishes one indication of aptitude for occupations which require speed and accuracy in nothing whether two numbers or two names are the same or different.

When appraising aptitudes for the higher level, clerical occupations such as secretary, foreign correspondent, accountant, auditor- stress is laid on the higher level of intelligence and on special aptitudes - linguistic, literary, mathematical etc.

4. Aptitudes for the professions

- a) Engineering :
- i) Aptitude for higher mathematics and science.
 - ii) Ability to perceive the sizes, and relations of objects in space and to think quickly and clearly about these relations.
 - iii) Aptitude to deal with spatial relations.
 - iv) Personality traits - meditative, solitary, scholarly, individualistic etc.
- b) Teaching : Palmer in his volume 'the teacher' has emphasized four traits, essential for a teacher
- i) Sympathetic imagination,
 - ii) Broad background of knowledge,
 - iii) Power to kindle interest,
 - iv) Capacity for disinterestedness - indifference to praise and recognition.

5. Musical Aptitude

Seashore's Musical Talent Test is used to judge this aptitude.

The test is one of appreciation, not of motor performance on musical instruments. It consists of six phonograph records testing the different essential components-pitch discrimination, intensity, time sense, consonance appreciation, memory for melodies and rhythm sense.

6. Artistic Ability

Meuer-Seashore Art Judgement Test is based on the reasonable assumption that aesthetic judgement, resting upon time discrimination, feeling and insight is basic to success in art, whether it be painting or some form of applied art. The task is to select from each of 125 pairs of pictures, the one that is better, more pleasing, more artistic, more satisfying. The two pictures forming a pair are identical except in one respect. Proportion of correct judgments seems to bear a significant relation to capacity for artistic development.

Development of Teaching Aptitude

Treatment interaction refers to the fact that characteristics of persons. Sometimes moderate the effects on these persons of instructional conditions administered to them. In turn, the importance of some personal characteristics with respect to some valued educational outcome often depends on what instructional conditions are administered. The study of aptitude treatment interactions in education aims at understanding when, how and why different persons benefit from different kinds of instruction, so the

educational conditions can be improved by adopting them to the needs and characteristics of each kind of person.

Aptitude treatment interaction research is a special case of the scientific study of person-environment interaction. The possibility of interactions has long been routinely acknowledged in the physical scientists qualifier 'other things being equal' and in the social scientists questions.

Substantive Definition and Implications for Education

In education many kinds of individual differences among learners can be observed and measured. When such measures predict individual differences in learning from instruction, they are interpreted as indicators of aptitude. When aptitude measures provide differential conditions, a conclusion of aptitude treatment interaction is justified. Many kinds of aptitude measures have been studied, including general and special cognitive abilities, personality and motivational attributes and cognitive styles. Many kinds of instructional treatment comparisons have also been studied. Theoretical and practical understanding of the aptitude treatment interaction phenomenon has not yet advanced to the

point where routine use of ATI in educational planning or instructional design is possible.

Aptitude treatment interactions are of interest theoretically because they demonstrate construct validity for aptitude and learning measures in a new way. They show how aptitude-learning relations can be experimentally manipulated and this understood in a causal rather than only a correlational framework. This suggests that neither aptitude constructs nor educational learning processes can be fully understood without reference to one another and raises the important possibility that common psychological processes underlie both aptitude and learning differences.

Statistical Definition

An ATI is a statistical interaction - the multiplicative combination of at least one person variable and at least one treatment variable in effecting at least one dependent or instructional outcome variable. ATI exist whenever the regression of outcome from one treatment upon some kind of information about pretreatment personal characteristics differs in slope from the regression of outcome from another treatment on the same information.

SECTION - I**PART - B****RESEARCH STUDIES ON TEACHING APTITUDE**

The aptitude measure serves primarily to indicate what an individual will be able to learn. A large number of research work dealing with aptitude of school children are available some researchers have confined their research to the preparation and standardization of tests for selection of students for teacher education courses, lists have been prepared of the qualities of good teachers. Some researchers who have worked in this area are Jha, V. (1970), Agrawal, S. (1973); Giri, B.K. (1976); Pande S.K. (1978); Pathak, A.B. (1983); Bandyopadhyay, J. (1984); Nagose, C.K. (1984); Bhattacharyya, A. (1986); Ghosh S.A. (1986). All the studies mentioned above are given in detail below.

Jha, V. (1970) studied an investigation into some factors related to Achievement in Science by students in secondary schools. The study examined the nature of relationship between intelligence science aptitude adjustment, anxiety, extraversion, study habits and socio-economic status on one hand and achievement in science on the other hand. The findings were:

i) There was a significant positive relationship between achievement in science and general intelligence, scientific aptitude adjustment. ii) There was no relationship between achievement in science and extraversion.

Agrawal, S. (1973) studied Medical Aptitude and other Psychological Variables associated with proficiency in medical examinations of U.P. The present investigation was started to find out as to how for psychological variables like medical aptitude, adjustment, intelligence and interest were associated with proficiency in medical examinations of U.P. The findings were : i) The adjustment was negligibly related with medical examination marks. ii) Intelligence was highly correlated with examination marks of medical students. iii) Interest was highly related to proficiency in medical examinations. iv) The correlations between combined scores of intelligence and aptitude and medical examination marks were positive. v) The correlation between combined scores of intelligence, interest and aptitude and medical examination marks were high. vi) There was no significant relationship between age and adjustment for the age group 17 to 24 years. vii) There was no significant relationship between interest and age. viii) Adjustment

and intelligence were positively influenced by increase in economic status, while interest showed a negative influence.

Giri, B.K. (1976), Measurement of aptitude for the study of physics of the high school science seniors of the state of Bihar with special reference to the students of Chota Nagpur Division. The main purpose of the study was to develop a test battery to measure the aptitude for the study of physics of the high school science seniors of the state of Bihar. A battery of tests having four main parts covering different areas was developed. Difficulty level, discriminative power and interval consistency of items were found out. The final version of parts I, II, III, IV A and IV B included 30, 30, 30, 16 and 16 items respectively. The standardization sample was derived from seven institutions of Palamall, Ranchi, Patana, Dhanbad and Singhbhum by adopting the purposive incidental sampling technique. The scores on the full test battery were available for 177 students. Central tendency variance and nature of distribution of scores were computed. Reliability was calculated through split half, K.R. formula. 20 and Flanagan's formula content, criterion related and factorial validity were determined. Scales and norms were prepared. Multiple correlation (R) was computed and

prediction equations were prepared. Forecasting efficiency of the test was determined. The Doolittle test selection method was used to select tests to form the present test battery. A test manual was prepared.

Pande, S.K. (1978) has studied Interest, Aptitude and Personality factors as predictors of scholastic achievement. The main objective of the study was to find out how far certain interest, aptitude and personality variables predict the scholastic achievement of students and to develop a battery of tests for the same purpose. The four control factors were rotated by the Narimax method of rotation. The first method was general scholastic ability with the highest positive loadings of cognitive abilities on it. The second and third rotated factors were personality and interest. Eight variables has offered a single classification battery which by means of differential weighting procedures enable one to measure differentially the scholastic developments and predict from the scores on variables at the beginning of secondary schooling. The scholastic achievements at the end of class IX of students offering humanity courses and science courses in secondary schools.

Pathak, A.B. (1983). An attempt was made in the present study to test the interest and intelligence patterns in adolescent students. Sample of 400 students in IX to XII. The findings were

- i) The children with high IQs tend to have a wider range of hobbies and interests and tend to be more mature in their interests than children of lesser intelligence do.
- ii) Children who participated in extra curricular activities are of higher average intelligence than the non participants.
- iii) Brighter children tend to be interested in more active and competitive games while children of lower intelligence have a greater interest in social activities.
- iv) Lower IQ groups are attracted with extra curricular activities.
- v) Activities such as drama and social publications draws children of higher I.Q.

Bandyopathay, J. (1984) Environmental Influence, Academic Achievement and Scientific Aptitude as determinants of adolescents, attitude towards science stream. The objects of the study were :

- i) to assess adolescent students attitude towards science and
- ii) to find out the environmental and academic factors that influenced their attitude towards science.

The hypotheses of the study were there is no significant difference between the pupils having a highly positive attitude towards science and these having

a highly negative attitude towards science with respect to any of the independent variables stated above either in isolation or in interaction. The major findings of the study were : i) Pupils having a high positive attitude towards science and a negative attitude towards science were different with respect to the independent variables either in isolation or in interaction. ii) There existed significant interactions between : a) source of inspiration and achievement in physical science, b) source, achievement in physical science and space relations, c) source, achievement in life science and space relations.

Nagose, C.K. (1984). A factorial study of divergent abilities, aptitudes, level of aspiration and scholastic achievement.

The objective of the study were : i) to study the different patterns of independent variables responsible for high scholastic achievement in science, arts and commerce streams, ii) to study the significance and importance of correlation between independent variables and scholastic achievement, iii) to study the predicative efficiency of the battery of nine independent variables to predict scholastic achievement in three streams. The findings of the study were : i) The predictive ability of the battery of nine independent

variables was 0.72. ii) High scholastic achievement in the science stream was more dependent on high intellectual abilities. iii) Divergent thinking abilities added substantially to better scholastic achievement in the arts and commerce streams. iv) Verbal ability and deductive reasoning were important determinants among intellectual abilities for high scholastic achievement in the arts and commerce streams. v) Unrealistic level of aspiration adversely effected scholastic achievement.

Bhattacharyya, A. (1986). A cross-sectional study on some differential aptitudes of secondary school students.

The main purpose of the study were i) to determine the extent of differential aptitudes, viz., verbal reasoning, English usage, abstract reasoning and scientific aptitude of the students of class VIII, ii) to determine the significance of differences in mean scores in the above three areas - sexwise and stratwise, iii) to determine prognostic values in these four areas on the achievement of the students in the respective school performances. The major findings were i) Boys showed better performance in verbal reasoning than girls, ii) There existed a significant difference in verbal reasoning between rural boys and girls, iii) Urban boys were not superior in

verbal reasoning to rural boys, iv) There existed a significant difference in English usage between rural boys and girls, v) There was a positive correlation between scores on verbal reasoning and Bengali, English usage and English, abstract reasoning and mathematics, scientific aptitude and physical science.

SECTION - II**PART- A****THEORETICAL LITERATURE ON ACADEMIC
ACHIEVEMENT****CONCEPT OF ACHIEVEMENT**

Achievement is the amount of knowledge derived for learnings. The child gains knowledge by the instruction he receives the school. Class-rooms are organised around a set of core activities in which a teacher assigns tasks to pupils and evaluates and compare the quality of their work. In the course of time pupils differentiate themselves according to how well they perform a variety of tasks, most of which require the use of symbolic skills. The class-room activities force pupils to cope with various degree of success and failure both of which can be psychologically problematic. The school provides a wider variety of achievement experiences than does the family. As proceed through successive school levels, the rigors of achievement increase for those who continue along the academic line.

The concept of achievement has several reference

"It usually denotes activity and mastery, making an impact on the environment rather than totalistically accepting it and competing against some standard of excellence." (Dreeban, 1968)

According to the Dictionary of Education (Carter, 1951) academic achievement means "the knowledge attained or skills developed in the school subjects; usually designated by test scores, or by marks assigned by teachers or both."

Dictionary of psychology, Chaplin (1901) defines Educational or Academic Achievement as specified level of attainment or proficiency in academic work as evaluated by the teachers by standardised test by a combination of both.

Comrey (1947) says achievement in schools consists of moving towards instructional objectives. Achievement of instructional objectives is the degree to which the pupil has more towards the objectives of the school. These objectives are the goals in the direction of which the curriculum seeks to change pupils. Thus achievement is accomplishment of proficiency if performance in a given skill or body of knowledge. Achievement

may be distinguished from ability. Achievement is what one acquires whereas the ability is the innate capacity of mind.

Concept of Academic Achievement

Knowledge attained or skills developed in the school subjects, usually designated by test scores or by marks assigned by teachers or by both. (Good, Carter, V. 1973, P.7).

Academic grades assigned by teachers or scores on standardized achievement tests are operational definitions of achievement. (Best J.W. 1977, P.27).

Academic achievement is knowledge attained or skills developed in the school subjects usually designated by the test scores or marks assigned by teachers.

Factors of Student Achievement

There are many studies on various casual variables affecting the academic achievement of pupils. These variables may be divided into three groups, namely school related, teacher related and pupil related. A brief sketch of the teacher and student related researches under the two main groups is presented ahead :

Teacher Related Factors : A teacher who puts in a number of years in the profession naturally becomes conditioned to the school environment. Mood (1970) points out that the experienced teachers develop seniority and hence one finds good association between student achievement and teacher experience.

Goodman (1959), Thomas (1962), Burkhead (1967), Katzman (1968), Hanushek (1968) and Guthric (1970) found significant relationship between teacher experience and pupil achievement. Some studies have shown that job satisfaction of teachers also plays an important role in student achievement, which means that job satisfaction and competence of teachers may be related to each other.

Sprinthall Whitely and Masher (1966) found a positive relationship between the cognitive flexibility and effective teaching. Arora (1978) and Goyal (1980) in their studies found that effective teachers had significantly more favourable attitude than ineffective teachers towards the teaching profession. Agron (1969) found that there significant correlation between the attitude and achievement motives of teachers and pupils.

Student Related Factors

Studies conducted by Mehrotra (1958), Ghosh (1968) and Sinha (1968) show that there is a high correlation between intelligence and achievement as measured by psychological tests.

Chatterjee (1972) investigated the effects of income, parents education, family size, general condition, of the home up on scholastic achievement of pupils. Their findings showed no effect of economic conditions, family size and parental-education upon scholastic achievement. Smith and Leland (1965) found that achievers had good study habits and were satisfied with their subjects.

There are very few studies in which student morale has been studied as a factor of student academic achievement in Australian studies, however, morale is viewed as a concept that links organizational climate and dynamics of high academic achievement. Pillai (1974) also concluded similarly. Smith (1972) related moral to certain characteristics of organizational environment. In the same way other investigators have studied causes and consequence of moral in various context, particularly in the industry and the schools. In the schools they have tried to bring

out factors and conditions that influence teacher's morale. The student morale has remained totally ignored, while the fact is that as part of human personality, it is of great significance so far as one's achievement in life is concerned.

Factors of Academic Achievement

Academic achievement of school students has been one area in which most research has concentrated in part four to five decades. A large number of studies have tried to identify various psychological and environmental factors that affect student achievement. There are still many factors and conditions which have been related to student academic achievement, but empirical studies of these are not yet made. On the other hand, there are a few factors which have been related to student academic achievement but such studies are not many with the result that the conclusions drawn from them cannot be considered stable teaching competency and attitude of teachers towards teaching and student morale are such factors. They have not been through studied in the context of student academic achievement. A brief review of research on factors of student academic achievement has been presented in the following section.

Student academic achievement is a complex behaviour. Many researcher have tried to study this university of factors in relation to student academic achievement. They may be divided into four segments as follows :

1) Intellectual factors

Studies that use intellectual factors to predict the academic achievement are in abundance, Cronbach (1949) has reported one study in which correlation between intelligence and grades was 0.55. Traver's (1949) found that correlations between intelligence and grade range between 0.50 and 0.75 on the eighth to tenth grade levels. Nanson (1958) observed correlations of 0.34 for boys and 0.39 for girls using intelligence as a predictor of grades.

In a study Wellman (1957) found a multiple correlation of about 0.80. The general and possible conclusion that can be drawn from the other studies that correlation between ability and school or college averages run between 0.40 and 0.50.

Bhatnagar (1968) quoting Froehlich and Hoyt (1959) says that when the measures of mental ability and achievement as measured by standardized test are correlated, coefficients can be

expected to range from 0.30 to 0.80 most of them at or near 0.55, the middle of the range.

A study was conducted by Jha (1974) in which academic achievement in science has been found significantly correlated with general intelligence. Another study made by Kulshrestha (1974) also revealed the importance of general intelligence. The study showed the possible relationship existing between intelligence and scholastic attainment of students in different subjects. It was found that the correlation of intelligence test-scores with subject marks were comparatively smaller than the inter-correlation amongst the scores of subject themselves. Most of the correlation coefficients between intelligence test scores and subject marks were too small to have any predictive values.

2) Environmental Biographical and S.E.S. Factor as predictors of Academic Achievement

It appears from a number of investigations that some environmental characteristics may also explain the discrepancies between aptitude and achievement. Thus Gampbell (1952) observed that certain aspects of the home background greatly affected secondary school achievement. Kemp (1955) also found

attainment to be related to socio-economic status. Klausmier (1958) compared certain physical, behavioural and environmental factors which were different for the two groups. One was the parental occupation and other was the sex ratio in the class. Duff and Seigel (1960) observed a negative relationship between effective utilization of academic ability on one hand and a degree of participation in physical social and heterosexual activities on the other.

Dngan (1962) obtained a relation between the educational tradition of the family and success of school. Street, Powell and Hamblen (1962) concluded that a large school tended to produce higher achievement level. The attempt of Waston (1965) to predict achievement with help of several background variables showed that excepting father's educational level, none of the variables was related to scholastic academic achievement.

Another biographical variable examined in connection with differential achievement is the study-habits. From the various studies, it can be inferred that the variable can be profitably explored in understanding the differences between the over achieving and the under-achieving groups, because several studies

record a positive association between study-habits and academic achievement. Holtzman, Brown and Fraquher (1954) obtained a significant relation between study habits and college achievement. Brown and Holtzmann (1956) observed study habits to be a good predictor of academic achievement both at the school and the college level. Jamuar (1966) noted a positive relation between the scholastic achievement and study habits. Srivasthava (1968) also obtained different patterns of study habits for the over and under achievers.

In a stratified society, as that in India, a researcher is act to start with a hypothesis that S.E.S. contributes to academic performance. In one of the studies Mathur (1963) has studied the effect of S.E.S. on behaviour and achievement of secondary school students. He has noted that S.E.S. is significantly correlated to educational achievement intelligence and conduct of student. In a study Chopra (1964) has examined the relationship between S.E.S. factor and academic achievement keeping the effect of intelligence constant. He has found that nearly six per cent of students who discontinued education attribute the reason to poor economic condition of the family. On the basis of parent's education

occupation, family income, type of lodging, size of the family and cultural level of home, students belonging to higher qualitative group show significantly higher achievement.

SECTION - II

PART- B

RESEARCH STUDIES ON ACADEMIC ACHIEVEMENT

Some researchers who have worked in this area are Sharma (1968), Gupte (1973), Bhasin (1974), Kulwant Kaur (1974), Bayti (1975), Seetha (1975), Beedawat (1976), Kolhi (1976), Goswami (1978), Joshi Anuradha (1991) and Subrahmanyam and Ramadevi (1991). All the studies mentioned above are given in detail below.

Sharma (1968) studied Relationship of Self-Concept with Anxiety and School Achievement of Adolescents. In this study the researcher investigated the relationship of self-concept (two measures : positive/ negative self-concept and self-ideal discrepancies) and general anxiety with school achievement. The findings were as : 1) The values denoted a significant linear relationship between two measures of self concept and anxiety. ii) Subjects with negative self-concept were significantly more anxious than subjects with positive self-concept. iii) Both self-concept

scores and self-ideal discrepancy scores were curvilinearly related to school achievement. iv) The subjects with a very high self-concept as well as those with a very low self concept were low achievers, as compared to those who came in the middle. Thus supporting the inverted U hypothesis. Such a relationship was claimed to be observed for the first time.

Gupte (1973) has studied Health and its effect on Academic Achievements and Temperamental Traits. The main purpose of the investigation was to study the health of secondary school students and its effect on their temperamental traits and academic achievement. The main findings were - i) The greatest variation in height was observed in the Std. VIII in the case of boys, weight variation was observed in different groups. ii) Sitting height was different in Indian boys and Foreign boys. iii) All physical measurements showed least correlation. iv) There was a positive relationship between health and two temperamental traits. v) No relationship between health and academic achievement.

Bhasin (1974) has studied Relationship of School Perception to Academic Achievement at High School level. The study attempted to find out the relationship of total school perception to

academic achievement of students of high school level, keeping in view the variable of intelligence. Self concept, sex, socio-economic status and teacher perception of students behaviour. The sample 200 students was selected randomly. The findings were - i) The correlations of SPPT with other variables were all positive and significant at 0.01 level. ii) The correlations of SPS with other variable were significant. iii) The multiple R for SPPT with academic achievement, intelligence, self-concept and socio-economic status was significant, and for SPS also significant. iv) Girls showed higher school perception. v) Teachers with students of higher school perception showed higher perception and with lower perception showed lower perception of their students behaviour.

Kulwant Kaur (1974) has studied investigations of differences existing among over Achieving, Normal Achieving, and Under Achieving. X class students in high and higher secondary schools. The objectives were : i) To establish differences among over, normal and under achievers with regard to study habits, personality characteristics and personal problems in Government school and ordinary schools. ii) To assist the under achievers by organising a

special educational performance of teaching-learning. The findings were : i) The relationship between achievement and study habits was higher in Model School than in ordinary school helping the students to understand both the mechanics and methods of effective study was a necessary first step in helping students to develop positive attitudes towards study.

Bayti (1975) has studied the effect of knowledge of results on achievement of school subjects in relationship with certain other variables. The objectives were : i) To study if the knowledge of results brings in progressive improvement in the academic achievement of pupils. ii) To find the earlier performance on the later academic achievement of pupils of various levels of intelligence. iii) To find out the effect of KR on the academic achievement of pupils with different personality traits. iv) To study the sex differences in academic achievement as produced by KR. v) Effect of subjects such as mother tongue, English, General Science, Maths with regard to the level of intelligence. The sample consisted of 1200 children of higher secondary schools of Bikaner. The findings were : i) With the help of knowledge of results it was found out that the experimental group improved their scholastic

performance. ii) The girls of the experimental group achieved better academically in all subsequent tests.

Seetha (1975) has studied an inquiry in to the psychological and social factors affecting academic achievement. The aims of the study were : 1) To examine the psychological and social factors affecting academic achievement. ii) To examine whether nonachievers as a group differ from the achievers on these factors. The findings were : i) High achievers possessed superior intelligence compared with low and non-achievers. ii) They possessed good study habits but low achievers had poor study habits. iii) Greater need achievement was found in case of high achievers than low and non-achievers. iv) No significant relation between interest and academic and academic achievement and in social adjustment and academic achievement was seen. v) Out of sixteen personality factors, three factors namely A, B and C had significant relationship with academic achievement.

Beedwat (1976) studied to find out academic under achievement among students. The objectives of study were : i) The incidence of academic under achievement among students of class IX. ii) Factors related to under achievement. iii) Relative study of

incidence of under achievement among boys and girls. iv) The under achievement rural and urban areas. v) Comparative study of under achievers over achievers and average achievers. vi) Relation between intelligence scores of under achievers and personality characteristics and factors of personality adjustment, motivation and study habit. The major findings were : i) Incidence more or less uniform in the rural and urban areas. ii) Incidence of under achievement was higher in science group. iii) The proportion of under achievers among girls was more than boys.

Kohli (1976) has studied the characteristic behavioural and environmental correlates of academic achievement of over and under achievers of different levels of intelligence. The purpose of the study was to study the characteristics behavioural correlates of academic achievement of over and under achievers at different levels of intelligence and characteristics environmental correlates of academic achievement of over and under achievers at different levels of intelligence. The findings were : i) The single factor, combination of factor sand factor constellations were not capable in themselves of clearly separating over achievers and under

achievers. ii) Certain factors were common to groups which differed widely in achievement.

Goswami (1978) investigated in the study of self-concept of Adolescents and its Relationship to Scholastic achievement and adjustment. The objective of the investigation was to study the self-concept of the school-going adolescents and its relationship to sex, intelligence, place of residence, scholastic achievement and adjustment. The sample consisted of 765 students (male and female) of class X of the secondary schools of Agra city. The findings were : i) The global self-concept of male adolescents was significantly different than the female adolescents. ii) Self-concept and intelligence had a significant positive correlation. iii) Self-concept mean scores of urban and rural students had no significant difference. iv) Self concept and scholastic achievement as well as self-concept and adjustment had a significant correlation.

Joshi Anuradha (1991) has studied the influence of treatment, personality and their interaction on achievement. The objective of the investigation was to study the effect of treatment. Personality and their interaction on overall achievement of the students. The findings were : i) In the group activity the extroverts by their nature

might have dominated and therefore, learnt more than their counter parts. ii) Extroverts are hold by nature so they took the advantage of all activities they were provided.

Subrahmanyam and Ramadevi (1991) has studied some differential characteristics of high and low achievers in secondary schools. Objectives of the study were to examine the differences between high and low achievers with regard to their intelligence creative talent, reading ability and achievement motivation. The conclusions were : i) The high achievers possess higher level of mental ability and low achievers possess low intelligence. ii) The scholastic attainment and creative talent are related to each other in a positive direction. iii) The high achievers better reading skills compared to low achievers. iv) The high achievers motivated towards achievement. v) School is the proper place to make us of intellectual ability to nurture the creative potential in pupils to improve reading skills, to inculcate good and healthy attitudes towards educational and goals of life.

The above studies through not directly related to the present research topic, they gave a background to the researcher regarding the relationship of other variable with the variable of academic

achievement and guided the researcher to plan out the present research study. As no similar study has been attempted so far, an urgent need for a research study of the present nature arose.