A REVIEW OF RELATED LITERATURE
CHAPTER II
A REVIEW OF RELATED LITERATURE

Emphasising the importance of the survey of related literature, Good, Barr and Scates (1941) have pointed out, 'survey of related literature helps us to show whether evidence already available solves problems adequately without further investigation and thus may save duplication. It may contribute to the general scholarship of investigations valuable in formulating the problem and may also suggest the method of research appropriate'.

Review of related literature also enhances the ability of the individual to make his own contribution towards increasing the previous stock of knowledge either by adding something altogether new or developing the old one with new perspective with its objectives before starting present investigation. A thorough survey is done so as to explore the area for further work that could be meaningfully useful. Taking into consideration the relevance of related literature the investigator has presented some significant trends related to present investigation as follows.

2.1 Instructional Design and Academic Achievement

Instructional design in the present study has been conceived in terms of programmed instruction. This variable has been studied at two levels. One level is the design based upon linear style of programmed instruction and other
is in the form of 'mathetics' mode of instruction. Many attempts have been made from time to time to compare programmed instruction with other methods of teaching.

Hughes and McNamara (1961) found the superiority of programmed instruction over the lecture method. Mager and McCann (1961) worked on learner controlled instruction.

Donnel (1962), Bruce (1962) and Hughes (1962) conducted an experimental study and result was in favour of programmed instruction. Keislar and McNeil (1962) found significant difference between the experimental group receiving instruction and constructed control group.

Mager and Clark (1963) reported 65 percent reduction in training time by giving students objectives for a course and allowing them to structure their own course. According to Holt (1960) programmed instruction was better than conventional instruction in terms of test and retest results. Henderson (1963) and Ripple (1963) supported the superiority of the programmed method of instruction over traditional lecture method. Lysaught and Williams (1963) showed many ways in which a linear programme could be modified into multipath programme.

Mullick (1964) found that the experimental group, which was sent programmed lessons in a correspondence course, achieved significantly better than the control group which was given the lesson prepared on conventional lines.
Shah (1964) had three treatment groups. One with programmed material to study, independently, a second getting help from the teacher to work through the programmed material and the third taught along traditional lines. The second group was not better than the first in attainment.

Sharma (1965) developed a programme in Geography and compared it with the traditional method of teaching. He found a gain of 23.10 points in favour of programme group and 9.12 points in favour of traditional group. Alexander (1965) also found programmed instruction to be better than traditional methods. Gleason (1965) reported that if programmed instruction is utilised, the class on the whole benefits by way of 'systematic analysis of the teaching learning process and determination of the most effective means of instruction'.

Gupta (1965) showed that an adapted programme on force was as good as the original and was better for students of lower ability. The study indicated that adaption could save a lot of time as compared to preparing a programme a new on the same topic.

Desai (1966) studied the relative effectiveness of programmed instruction and traditional method of class room teaching. The difference was significant at 0.01 level of significance, in favour of programmed instruction. He found that students preferred programmed approach. Hartley (1966)
found from his study that programmed instruction was superior to traditional method of instruction.

Gilbert (1967), extended his mathetics approach into a philosophy called praxeonomy for systematically identifying real training needs by performance analysis. Mullick (1968) found that the result was strongly in favour of programmed lessons.

Shah (1969) and Kulkarni (1969) tried to study the effectiveness of programmed learning with the students from lower grades not having required entering behaviour. Shah reported that if some technical terms were explained by the teacher, the pupils of standard V could learn the topic of standard VIII through the programme and could answer the items of the post test quite satisfactorily. But these pupils of standard V took almost double the time taken by the pupils of standard VIII to complete the programme. Kulkarni’s (1969) study showed that the pupils not having specified entering behaviour did significantly better after completing one revision only, if they used programmed material for revision. From the studies of Sharma (1966), Kulkarni (1969) and SIE (1970) it was confirmed that not only immediate learning gains as measured by the post tests were higher for students working through programmed material, but also their retention scores were better. Students using programmed material for revision were
significantly better than students who adopted other methods of revision.

Shah (1971) examined four different modes in a programme material on directed numbers and found that the 'response prompt mode' where pupils had to read the answers provided in the blank, was the most effective in terms of immediate posted score. It was also the least time consuming. To Shah's (1971) list of modes, Krishnamurthy (1972) added three more response modes including branching style as well as two styles devised by himself. For his skip programmes and hybrid (combining linear and branching styles) - a programme on 'thermometer', like Shah (1971), he concluded that the covert answer prompt form was the most effective for students' immediate achievement.

Programmed learning was used for remedial teaching in some Indian studies. Joshi (1972) used programmed material for remedial teaching for the first year degree students. Shah (1971) and Kapadia (1972) used programmed material for under achievers in algebra among the students of standard VIII in a rural area. Both the studies indicated that learning through programmed way helped the students to improve their achievement.

Gupta (1973) studied the interaction between step size and response mode and found that the small step was more effective with overt response and showed the least retention, while the large step was good for correct
response and showed high retention. Singh (1973) found that thematic prompts were more effective than formal prompts for a geography programme. Gupta (1973) developed a self instructional programme in basic sentence pattern of English for the graduate students. The study was evaluated in terms of programme density, error rate and sequence progression separately for definitions and structures. The programme density for the frames on definitions ranged from 0.4 to 0.15 and the error rate for the same frames ranged from 1.2 to 3.4. The programme density for the frames on structures ranged from 0.4 to 0.08 and the error rate for the same ranged from 1.4 to 3.2. The average density and error rates for the complete programme taking the parts on definitions and structures together were 0.06 and 2.0 respectively.

Chauhan (1973) studied the programme text in educational psychology. It was found that the error rate did not exceed 8.72 percent. The sequence progression for each unit was normal and students expressed favourable opinion.

Sennet (1973), Triplings (1973), Harris (1973) and Vernon (1973) favoured programmed instruction as a better method of teaching as compared to traditional methods.

Dewal (1974) investigated the difficulties in teaching English and also the effectiveness of programmed strategy. The study revealed the effectiveness of programmed learning. Ronhausen (1974) showed programmed instruction to be an effective method in kindergarten and first grade.
Mehta (1973) developed and validated a programme in English for developing reading ability at the initial stage. The performance of the experimental group studying with self-instructional programme was found to be much superior to that of the teacher-taught group with respect to both acquisition and retention of reading skill in English. It was a linear programme developed for children of class V.

Bhushan (1973) attempted to study the linear programme in educational statistics. It was concluded that the mean of attainment scores was 78 percent and that of gain scores was 76.8 percent. Average achievement was almost equal at the knowledge and application levels.


Reddy (1975) compared the programmed learning with conventional learning in the instruction of language. There were some definite advantages found in the programmed learning method over the conventional method. Siemen (1976), Arimoto (1976) and Jean (1977) also indicated programmed instruction to be an effective method.
Bhusan and Goswami (1978) conducted their investigation on fifty class VIII students drawn from English medium public schools having three groups of students at three levels of intelligence with a view to compare a linear programme and a structural communication strategy. Having a 2x3x3 factorial design, they concluded that structural communication worked well and the high and the middle intelligence groups achieved uniformly higher at knowledge and higher objectives. The structural communication strategy proved steadily superior for the higher categories.

Two studies by Sharma (1978) and Ahuja (1978) explored the interaction of personality characteristics of anxiety over and above the effectiveness of programmed approach. Ahuja (1978) did not find a significant effect of anxiety on the performance of 95 students of English medium girls higher secondary schools. She also compared the effect of immediate and delayed feedback where no difference was detected. The achievement at the knowledge level was maximum and less at the comprehension and application levels. The categories of objectives had no interaction with anxiety of feedback tactics. Taken together, however, anxiety, feedback and categories of objectives had an effect on achievement independent from each other. Sharma (1978) analysing the achievement of 64 girl students of science, drawn from English medium higher secondary schools and working through
a linear programme in Chemistry found that the achievement of the low anxiety group was the best followed by that of average anxiety group. These two findings raised doubt on the very validity of the question of the effect of non-intellectual personality variables on achievement in the programmed material. The issue is open for further probing. Anxiety scales have been developed and standardised in India. These may perhaps be used profitably to explore different categories of anxiety. A free floating anxiety may have a different kind of effect compared to other forms of anxiety. Other personality characteristics e.g. security, insecurity, depression, dependency, extraversion, introversion etc. have not been adequately enquired into so far. Some of these have established relationship with academic achievement in the studies by different researchers already, thus providing a criterion on the basis of which one would choose personality factors for studying the effects on the achievement of people through programmed material.

Mullick (1979) compared a multi media programme with a book format programme. His study covered 204 students of class V and 240 students of class VI. He had six matched groups on the basis of intelligence. Besides post test, he administered a retention test. Either format was viable for teaching science. The multi-media programmes were quicker for recall of terms, comprehension, application, drawing and teacher made tests, but the book format was better for
spelling and for lower level students in English and general science. The sample drawn from English medium schools might be a little biased towards the upper socio-economic status. Perhaps the study should be fruitfully verified in samples drawn from schools with other languages as medium of instruction.

Parlikar (1979) studied the suitability of programmed learning in home science with 135 students of class IX, preparing PLM for self studies and as an aid to lecture method. It was more suitable both as self study and as supplement to lecture. The high achievers found PLM for self study more suitable. Other auxiliary variables, e.g. intelligence, socio-economic status etc. were also analysed.

Shah (1980) developed a system of four components for the course on educational evaluation at the B.Ed. level. The study was conducted for two consecutive years and the strategy was found to be effective for three components, programmed learning material, discussion and practical work, whereas ‘library work’ was not effective. Programmed approach being mainly self instructional, one wonders whether a rejection of library work is compatible with the basic values of this method.

Trivedi (1980) developed branching style programmed material in mathematics for classes V, VI and VII. For class VI the programmed learning material was more effective than the corrective teaching and for classes V & VII both the
methods were equally effective. The class VI girls learnt better than the boys whereas in the other two classes there was no difference between the sexes. Brown's (1980) study favoured the individualised instruction. Leone (1980) found that programmed instruction group had greater post-test minus pretest scores than those of the conventional group. In addition to it, experimental group learnt more.

Jeyachandran (1980) studied the efficacy of programmed filmstrips for teaching history to secondary school children. The sample had 450 boys and 315 girls from Madras city divided into three groups, one having the teacher and the programmed filmstrips, the other with only the programmed filmstrips and the third, a control group with the conventional method. It was found among other things, that the programmed materials were more effective and that higher cognitive abilities could be developed through the PLM. However, the retention was more when the teacher was also present in which case knowledge, understanding, application and skill were distinctly better. The study also used 'group pacing' and had revealed its feasibility. This should be encouraging from the economic point of view.

Pandey (1980) covered a sample of 60 students of class IV of the central school. He found that the programmed text was superior to other methods and that the high and the low income group students following the programmed text were
distinctively superior to those who had traditional teaching with home assignment and grading.

Suther (1981) developed algebra programme for class VIII covering set theory, rational numbers, real numbers, powers, indices, equations and problems, graphs, study habits, attitude towards mathematics, learning abilities, and motivation towards school. Learning and entering behaviour were also analysed. The programmed learning material emerged superior irrespective of different variables.

Man (1981) studied the effect of unit test scores and retention following the programmed material in a segment of physics. He had a sample of 762 male students. One group had unit tests, the other did not. He found that the immediate retention of students going through PLM with tests was better. As might be expected, the immediate retention was higher than the retention after a gap of one week and six weeks and those who had taken unit tests after PLM fared uniformly better. Mavi (1981) developed a programmed text in physical geography for high school students and covered 124 students of class IX. Ninety five percent of the learners answered correctly 95 percent of the 1.391 frames and in the unit tests scored between 85 percent and 91 percent. Waters (1981), Emery (1981), Gredler (1981) found programmed instruction to be superior to traditional method.
Inamdar (1981) developed a programme on simple interest for class VII. Conducting his investigation on 108 boys and 100 girls in twelfth class periods, he found that the programmes fared better than the conventional method.

Shah (1981) found that the programmed materials for class V on integral numbers, factors, HCF, LCM, fractions, addition and subtractions of factors, decimal fraction, ratio and proportion, profit and loss, average, line segment, ray, angles, angle types, area, square, rectangle and parallel lines were effective and acceptable. They were covered in a total of 24 hours and 40 minutes.

Modes of presentation had attracted two studies, of which Sharma (1982) compared linear branching programme on pollination in angiosperms with and without prior knowledge of objectives. He had one hundred boys and one hundred girls of class X for his study and divided them into four groups of fifty each. Using 2x2 simple factorial design he found that the branching programme with prior knowledge of behavioural objectives was the most effective and the linear programme without knowledge of behavioıurał objectives was the least effective.

Davies (1982) studied the effects of different modes of pairing in programmed learning of mathematics on the achievement of under achievers. He had 1.092 students for class IX drawn from nine urban and one semi-urban schools. The under achievers in mathematics were identified using two
scores in an achievement test from an intelligence test. The under achievers, 105 in number were grouped with abler students in three ways - mixed ability, teachers’ choice and students’ choice and learnt the programmed materials in dyads thus mixed. Post test and retention tests were administered later. The most effective were the mixed ability pairing and teachers’ choice pairing where intelligence and school background were controlled, the different modes of pairing by themselves were effective in improving underachievers’ performance, other variables like locality, sex etc. were also analysed. This study also revealed an eagerness for economising as also a step forward towards group programmes. It is also a healthy trend to build in more and more humanistic approach for using programmed learning, thus far accused of a rather mechanistic and dehumanising approach.

The result of Gupta’s (1983) study showed that experimental group which was taught by programmed learning was superior both in terms of retention and quantity.

Rabindradas (1984) found that the self instructional material on health education developed by him for school students resulted in better learning than the conventional classroom teaching. Bhadwal (1984) studied the test anxiety and performance of the students when interim tests were used and with results made known to the students. He also varied the mode of teaching/learning between conventional
and programme learning material. Programmed learning material showed superior retention over a longer period of time.

Desai (1985) compared the programmed learning approach with learning through experiments, slides with discussion and the traditional way of teaching science to students of class VIII. He concluded that the programmed learning approach was better than the traditional method, but on par with teaching through slides. Learning through the experimental approach was the best. The usual classroom teaching showed poorest results.

Chaudhri (1985) found the after perusing programme learning material, students gained significantly as far as knowledge of the subject was concerned.

Sharma (1987) found that programmed learning method was more effective than the conventional method for superior and average children but not for below average students.

Kalacherry (1987) developed instructional material in the linear style for the chemistry syllabus of grade VIII. It was found that a few students who scored usually below 50 percent in the traditional system, scored above 85 percent through the use of programmed material. When used for teaching a topic of science to class IX students, both the programmed learning formats, linear and branching, were found by Gautam (1986) to be equally good in terms of achievement of students. The studies of Alharthi (1990) and
Robert (1991) concluded that the programmed instruction helps low achievers to achieve better.

However, there are some studies which could not find any significant difference between traditional method of learning and programmed learning. Zukerman, Marshall and Geosesberg (1961) found out that the text book method was the most effective one followed by lecture method and programmed learning. Dessart (1962), McGarney (1962), Kalin (1962) and Smith (1962) found the traditional group and programmed learning group to be equivalent in achievement.

Whitlock, White, Copeland and Craig (1963), Geller (1963), Lease (1964), Grell (1964), Meadows (1965) and Gupta (1965) studied the possibility of adapting programmed learning materials on 'force', in physics developed abroad, for use in our country. The modified version of the programme was administered to one group of students and their performance was compared with another group of comparable students who were taught the same topic by usual method. In the second phase, the adapted programme was compared with the original programme. The findings revealed no significant differences between the group studying the topic through the adapted programme and the group taught by the teacher. Stannard (1969) and Schnur (1970) could not find the superiority of programmed instruction over other methods of instruction. Shah and Krishnamurthy (1970), Glower (1971), Reed (1971), Hanson (1972), Metcalf (1972),
Hugh (1975), Bhushan & Sharma (1975) and Jernstedt (1976) found lecture format to be better.

Hattingh (1976) concluded that programmed instruction deserved a place in education, however, it cannot be a substitute for the actual educational task of the teacher. But it may be an instrumental aid for the latter.


Kumar (1981) conducted an experimental study having three methods and two levels of intelligence in a 3x2 factorial design. He had two groups of 90 students each of classes IX and X and exposed one group to the programmed learning method and the other to the multimedia method. The latter tended to be more effective than the programmed learning method.

Khanam (1983) found no relationship between programmed learning material as a means of learning and personality variables such as extraversion and neuroticism. She used a mixed programme. In studying the relationship between some personality variables such as intelligence, creativity, neuroticism, extraversion and level of aspiration with the use of mathetics in mathematics, she reported programmed learning material less effective than
the teacher directed structural lessons for total achievement in learning concepts and rules.

Somewhat different findings are reported by Kothari (1985). Comparing the efficacy of different instructional media in teaching algebra to the pupils of class IX, he reported that the visual projection was more effective than activities and experiments or programmed learning material. Kagathala (1986) found that the branching programmed learning material (PIM) produced better results than the linear PIM.

Several studies have been reported regarding comparison of different styles of programmed material, different formats of presentation of the programmed material and between different approaches to teaching learning with reference to programmed learning material.

In comparison with other methods, the programmed learning may be found more effective and also less effective for some students. It has its own strengths and weaknesses like every other method. However, one often wonders whether such a lot of scrutiny has been exercised on any other method or approach to teaching. It may ultimately be good for the programmed approach to have had as many examinations from so many angles. What is more important to bear in mind is that there might be good programmes and bad ones, and from such a situation a singular conclusion, either way, about the method itself may be unwarranted. If, however, a
number of studies are combined, a broad based generalisation points out the efficacy of the approach of programming. Mayer (1981) was of the view that as both programmed learning and traditional method of instruction had benefits to offer, it was best to follow both types of instructions in a proper mix.

2.2 Achievement Motivation and Academic Achievement

Academic motivation is the academic competence, the striving for achievement. It is the motivation to learn that gives direction and intensity to human behaviour in an educational context. It has been observed that academic achievement is affected by achievement motivation. Atkinson (1964) assumed that n-Achievement would be positively related and test anxiety negatively related to the levels of achievement oriented performance.

Morgan (1951), Sarason & Mandler (1952), Lowell (1952), McClelland et al. (1953), Riccinti and Sadarca (1955) and Clark & McClelland (1956) found positive correlations between academic grades and n-Achievement. As a result of their studies Strodbeck (1958), Rosen (1959) found that a positive significant relation exists between achievement motivation and scholastic achievement; Pierce & Bowman (1960) and Unlinger & Stephens (1960) found a moderate but positive relation between need to achieve and achievement.
Lawerence and Constanlive (1963) reported that achievement motivation and achievement are related to each other for men but not for women. Litting and Yeracaris (1963) also reported a positive significant correlation between these two variables. Farquhar (1963) found as a result of his study that no relationship existed between intelligence and achievement for negro males, yet academic motivation tests exhibited significant and high positive correlation with achievement for all the groups.

Coplehorh and Sutton (1965) found a moderately significant positive relation between the two variables. Knight and Sassernath (1966), Bhatnagar (1969) reported that over achievers have higher n-Achievement. Atkinson and Feather (1966) found that excellence of achievement is affected by achievement motivation. O'Connor et al. (1966) found that students with high achievement motivation were more challenged in a homogeneous ability group because of the competition and in such groups, they show higher preferences for and stronger persistence at tasks than students with low achievement motivation in ability groups. Heckhausen (1967) found that students with high achievement motivation are better able to handle independent study programmes than low achievement motivated students. This finding confirms McKeachie’s (1961) research: students with high n-Achievement achieved better than low achievement motivated students in classrooms where teachers emphasized
more self instruction. Davids (1966), Irvin (1967) and Ringnes (1967) found positive relationship between academic achievement and n-Achievement.

Tamhankar (1967) conducted a study on the achievement motivation of young adolescent boys. A significant aspect of this study was the development of a scoring manual for n-Achievement in Marathi language. The results are rather interesting and indicate relationships between achievement motivation and personal values, socio-economic status, intelligence and academic achievement.

Mishra (1967) studied certain personality correlates of need achievement among university students. The study revealed that a high n-Achievement person tends to be less authoritarian, reacts to frustration, is less anxious and has high level of adjustment.

Birney (1969), Mehta (1969), O'Shea (1970) and Sinha (1970) concluded that achievement motivation and academic achievement were significantly related.

Aronoff and Litwin (1971) reported that the executives in the achievement motivation training programme had achieved significantly better than those who attended a regular executive development programme as measured by changes in job level and salary. Chaudhary (1971) conducted a study to assess the relationship between achievement motivation and anxiety, intelligence, socio-economic status and vocational aspiration. De and Priya (1972) found
significant relationship between achievement motivation and educational level.

Dutt & Sabharwal (1973) and Olson (1973) found a positive correlation between the two variables. Walayti Ram (1974) concluded that n-Ach had significant influence on all the subjects at the lower level of intelligence but at the higher level in science only.

Pathak (1974) studied achievement motivation and school performance of high school boys. The pupils studying in schools of high socio-economic and achieving status had high n-Ach scores as compared to pupils studying in schools of various status combinations; n-Ach showed positive relationship to school performance.

Mohan (1975) found that those children who were given free comments (both praise and blame) about their performance on an objective test, achieved higher scores on subsequent tests. Calhoun (1975) and Johnson (1975) found that n-Ach was significantly related to the post test mastery scores.

Parikh (1976) studied the levels of achievement motivation and each component of it, motivation towards school, educational norms, school performance and anxiety of pupils. He found that n-Ach was positively related to SES, performance, perception, belief and with all the n-Ach components; educational norms regarding achievement related perception and belief were significantly related to
achievement motivation. Pandharipande (1976) traces the socio-cultural correlates of achievement motive among secondary school students and finds the middle class having a higher n-Ach than the lower class. Rao and Vijayashree (1976) studied the psycho-social maturity and motivation profiles of management students.

Abrol (1977) studied achievement motivation in relation to intelligence, vocational interests, achievement, sex and SES. He concluded that the boys tend to have higher motivation than girls. SES and family affect achievement motivation. Malik (1977) found that both the variables are slightly correlated. Christian (1977) conducted a study to know the relationship between n-Ach and school performance and found that there is a significant positive correlation between the two variables. The studies of Medhi (1977), Padah (1977) and Caldwell (1977) indicate that level of motivation may be a determining factor for the academic success.

Gupta (1978) also found a positive relationship between n-Ach and academic achievement. Singhanlakh (1979) found that motivation was found to have a significant relationship with better performance and achievement. Gupta (1979) reported a positive relationship between psychological stress and the various independent variables viz., n-Ach, educational aspiration and the occupational aspiration. Achievement motivation was found to be the most
potential independent variable determining the limits of psychological stress.

Dhillon (1979), Hussain (1979) and Narula (1979) studied achievement motivation in relation to different variables. They found its positive relationship with academic achievement.

Zarger (1980) studied need achievement in relation to intelligence, creativity and scholastic achievement. Need achievement study reveals a positive relationship with non-verbal creativity. According to Hirunval (1980), academic motivation as measured by junior index of motivation was positively related to self concept and some of its components. Boys were more academically motivated than girls. Mazzilli's (1980) study indicated that over achievers had higher total motivation scores than the under achievers.

Gordon (1981) found that motivation was significantly correlated with achievement in written English. Saxena (1981) studied need achievement in relation to creativity, values, level of aspiration and anxiety among secondary school students; n-Ach was found to relate significantly with creativity and the level of aspiration, and to have no significant relation with anxiety. Sheel (1981) studied task performance as a function of need achievement. It is reported that these variables have a significant positive relationship. Anxiety and need achievement are studied among intermediate students by Singh (1981).
Singh (1982) concluded that achievement motivation had positive and significant relationship with verbal, non-verbal and total creative thinking. Barki (1981) found that high achievers have high n-Ach. Rajeeva (1982) found a significant difference between the achievement score of high and low achievement motivated students. One interesting study by Trivedi (1982) is on the n-Ach score revealed through children's literature in Gujarati. The children stories are found to contain only 15.5 percent of achievement imagery and more of task imagery and unrelated imagery. This study has a lot to contribute to the curriculum development.

Chatterji (1983) found that the score on achievement motivation of students of science or commerce were significantly higher than those of the other groups.

Jain (1983) found that there existed positive linear significant relationship between the students' scores on concept formation and achievement motivation.

Pattnaik (1984) and Sween (1984) found that achievement motivation and academic achievement were significantly correlated with each other.

Similarly, Kaur (1985) concluded that high n-Ach students achieve significantly higher than students with low n-Achievement. Vimla (1985) found that there was a highly significant and positive relationship between achievement motivation scores of track athletes and their achievement
scores. Tripathi (1986) conducted a study and found that achievement motivation of boys and girls was highly correlated with intelligence and achievement.

Kaur (1987) indicated that significant positive correlation has been found between achievement motivation and academic achievement. Swain (1986) indicated that achievement motivation has positive and significant effect on academic achievement.

The study of Bernadette & Leonard (1990) showed that n-Achievement was significantly correlated with all four work-related success dimensions: status/wealth, personal fulfilment and professional fulfilment (positively). Suciati (1990) found that motivation effect on achievement was 0.61, which explained 36 percent of achievement variation. Hsiang-yeng (1991) found that a weak but positive correlation was found between achievement motivation and academic achievement and achievement motivation interacted with study habits when predicting academic achievement.

However, there are some studies which found negative correlation between n-Ach and academic achievement. Parrish and Relthlingshafer (1954) and Lazarus et al. (1957) found a negative correlation between these two variables. Hills (1958) found that results related to the relationship between n-Ach and academic achievement were confusing.

Holt (1960), Broverman et al. (1960), Cole et al. (1962), Sarason (1960) and Smith (1964) found a negative
relationship between achievement motivation and scholastic achievement. Bhatnager (1969), Dotty and Dotty (1971), Fedell (1971), Shaver and White (1971) and Gokulnathan (1972) found no significant correlation between the two variables.

Walayti Ram (1974) found that motivation did not show any effect unless it was of a sufficiently high order. Hartley (1974), Girija et al. (1975) failed to find any significant relationship between motivation and achievement.

Jyoti (1977) reported that the high need achievement score had little effect on performance and Joginder (1984) could not find significant correlation between n-Ach and academic achievement.

Tripathi’s (1986) study concluded that there is significant negative correlation between achievement motivation and academic achievement. The results of Velma’s (1991) study indicated that there were no significant differences in the relationships between the achievement motivation scores and the grade point averages of Mexican American ($r = -.01$) or Anglo American students ($r = -.16$).

2.3 Self-Concept and Academic Achievement

The importance of self concept in relation to academic achievement has become a topic of key interest. Several studies have revealed that self concept of a student is a functionally limiting as well as a facilitating factor in his academic achievement. Lecky (1945) suggested that
scholastic achievement tended to be consistent with the individual's self assessment. Jersild (1954) was of the view that the learner proceeds, interprets, accepts, resists or rejects what he meets at school in the light of his self esteem. Brookover (1959) has pointed out that a student learns what fits in with his self concept.

Investigations carried out in India and abroad have revealed a significant positive relationship between self concept and measures of academic achievement. Coopersmith (1959) and Bruck (1959) found a positive correlation between self concept and school achievement. McCandless (1961) predicted that poor self concept affects the achievement of a child at school.

Shaw and Alves (1963) found that under achievers had negative self-concept. Bledsoe (1964), Brookover et al. (1964) and Shailor (1964) found that self concept and achievement in academics are positively correlated to a significant degree. Students possessing positive attributes are generally high achievers, whereas students with negative beliefs and feelings about themselves are usually underachievers and failure in school.

Rosenberg (1965), Miller (1965) and Coopersmith (1967) also reached the same conclusion as a result of their studies. Lansman (1968) and Mehta (1968) concluded that underachievers were characterised by negative self concept.

Caplin (1969), Standford (1969), Renbarger (1969) and Sproull (1969) identified a positive relation between the
self concept and academic achievement. Friedman (1970), Morakinyo (1970) and Mohammad (1970) discovered as a result of their experimental studies, the positive correlation between the two variables i.e. self concept and academic achievement. Lewis (1971), Pecke (1971) and Sidwai (1971) found that enhancement of self concept by itself was a sufficient condition for improvement in academic achievement.

The studies of Vasantha (1972), Barton and Dielman (1972), Norma (1972), Sally (1972), and Emmannel (1972) concluded that self concept is significantly correlated with academic achievement. Fee (1973), Mwaniki (1973), Abbot (1973), Smith (1973), Paul (1973) and Krupazak (1973) reported a significant positive correlation between the two variables.

Hybertson (1974), Coley (1974), Calysyn (1974), Cole (1974), Pruneda (1974), Joseph (1974) and Vilhoti (1974) indicated that self concept is positively related to the achievement of the students. Yates (1975), Lewis (1975), Larry (1976) and Robinson (1976) also found that high achievers were found to have significantly more positive self concept than low achievers. Richard (1976) concluded that students who achieved high in biology had high self concept in science. Ohlenkamp (1976) reported low but positive correlation between self-concept and academic achievement. Mintz and Muller (1977) also found positive correlation between the two variables.
Gomati, Mani and Gonsalves (1977) found that the teachers with better self-concept scored more on practice teaching than the teachers with poor self concept. But the relationship between the self-concept and the teaching practice scores in general was not significant. Gupta (1977) concluded that creativity and self concept were found to be closely related dimensions, yet presence of a common factor between the two was not borne out by the results. Laxmi (1977) reported that the self-concept was meaningfully related to n-Ach; students with high and low self concept revealed significant gains in n-Ach. Singh (1978) found that there was a positive and significant relationship between verbal creativity in teachers and their self concept.

Nagaraju (1977) reported that the self-concept was found to be significantly related with achievement. The relationship of self concept with achievement was significant even after eliminating the effect of other significantly correlated variables with achievements in standard VIII and X. Shah (1978), Goswami (1978) and Adrian (1978) found positive relationship between self concept and academic achievement. Sharma (1978) studied that self concept showed high positive and significant relationship with achievement and intelligence. Boys were found to be superior to girls in all areas on self concept.

Goswami (1978) found that there existed positive relationship between self concept and achievement and the
adolescents with good self concept were likely to achieve more than those with poor self concept. There was a strong relationship between self concept and adjustment. Shah (1978) found that there was no significant sex difference in self concept at grade IX while the same at grade X was significant. The girls as a group did not indicate higher positive self concept. There was no significant difference between the mean scores on the self concept of pupils studying in grades IX and X. The relationship between self concept and academic achievement was significantly positive and linear.

Chand (1979) found that self concept of the adolescents and SES in terms of education of parents, occupation and income of father and total income of the family from all sources proved to be very important correlates of vocational maturity of adolescents. Academic achievement of students was also directly related to their vocational maturity. Washington (1979), Bagsby (1979) and McClary (1979) too associated self-concept with academic achievement.

Sharma (1979) found that the level of self concept affected academic achievement positively and significantly. The level of self concept did not influence the level of aspiration. Differences in self concept affected mental health. Boys scored higher than girls on all the elements of self-concept at the age of 18+.
Litwack (1980), Hirunval (1980) and Savicky (1980) found casual relationship between self concept and academic achievement.

Bhadauria (1980) found that overall mean score of the gifted students was significantly higher than that of the non-gifted students, the gifted students had significantly higher positive aspects of self concept. They showed significantly higher degree of confidence. The achievement scores were also higher. The non-gifted students had significantly higher negative aspects of self concept. They exhibited significantly higher degree of withdrawal, inferiority feelings and emotional instability than the gifted students. Hirunval (1980) found that the self concept of pupils and their classroom climate showed positive relationship. The self-concept and pupils' academic achievement were positively related. Rani (1980) concluded that a significant relationship existed between academic achievement and different aspects of self-concept.

Mayer (1981), Robinson (1981), Bulbul (1981) and Hahn (1981) found positive inter correlation between self esteem and academic achievement. Prince (1981) reported that the achievement anxiety, self concept, value system, intelligence, achievement motivation and scholastic aptitude were significant predictors of the level of aspiration for education. Kamat (1981) observed difference in self concept, scholastic achievement, educational and
vocational aspiration etc. between backward and non backward class adults. Koelle (1981) concluded that self concept correlated significantly at 0.01 level with all the sub tests.

Sarswat (1982) found that only intellectual self concept was positively and significantly related to academic achievement in both the sexes. Kachoyeanos (1982), Wroble (1982) and Aggarwal (1982) found a significant relation between grade point average and self esteem. Smith (1983) studied U.K. under graduate students and his study indicated that the self-concept accounted for 36% of the variability in grade point average. Sabri (1986), Batterson (1987) and OjoElizabeth (1988) found a positive significant relationship between self-concept and academic achievement. Robert (1990) and Hale (1990) found a positive relationship between self-concept and achievement. The findings of Owens (1991) support the theoretical proposition that positive self-concepts are a function of developing competencies.

There are some studies which report negative relationship between the self concept and academic achievement. These studies reveal that there is no difference between high self-concept and low self-concept children. Mitchell (1959) reported that the performance of self rejecting women was equal to the self accepting women. Buchin (1966) reported that there was no relationship between self concept and academic achievement. Peters (1968)
reported that 'tennesses self concept scale' is not significantly related to over and under achievement. Dwyer (1969) and Frederic (1969) could not determine whether higher self concept resulted in higher achievement or not.

Deo and Sharma (1970) reported that there was no relationship between self concept and academic achievement. Meighan (1970) and Morakinyo (1970) found that no significant relationship exists between the two variables. Gillman's (1970) study did not show a tendency towards a positive correlation but he could not find any significant correlation between the two. Velma (1971) could not find any difference between the readers of high self concept and low self-concept.

Moore (1972) did not show that self concept was a sufficient factor to determine achievement. Richard (1973) found that no relationship exists between self esteem and achievement. Bhasin (1974) found that those high on academic achievement, intelligence, self concept and socio-economic status had high school perception and low on these variables had low school perception. Harold (1975) indicated that the relationship between self esteem and reading achievement, though positive, was not large enough to be a predictor of success.

Edwards (1976), Friedman (1976), Saoi (1977) and Gold (1978) reported that self concept does not effect achievement.
Moorjani (1979) concluded that there was a negative correlation between the scores on coloured progressive matrices and self concept. Baughman (1980), Taylor (1980), Cotton (1980) and Morford's (1980) studies showed no significant difference between self concepts of high and low achieving students. Haynes (1981) and Watkins (1981) could not find any correlation between the two measures. Some objectives of Manav's (1981) study were to ascertain the relationship of attitudes, self-concept and values with achievement of professional and non-professional college students and to identify the factors that contributed more significantly to the academic achievement of the students in a particular faculty. But he reported that none of the self concept variables was found to be significantly related to the students' achievement.

Saxena (1981) found that it was interesting to note that the first order interaction between socio-economic status and cultural setting had no significant effect on self concept, study habit and school attitude. Also the second order interaction among scholastic achievement, socio-economic status and cultural setting had no significant effect on self-concept, study habit and school attitude.

Boldt (1987) could not find any correlation between self concept and academic achievement.

Christine’s (1991) investigation did not provide support for a relationship between domains self-concept and academic achievement. Luttrell (1991) found that no significant differences in self-concept levels existed among winners, and losers immediately following competition.

2.4 Level of Aspiration and Academic Achievement

For the measurement of level of aspiration, a person is asked to fix some amount of work (generally a mechanical task) which he can perform within a given time (generally part of a minute). This behaviour is known as goal setting behaviour. In experiments of level of aspiration which means an immediate goal, almost within reach, whatever a subject sets as his momentary goal may be taken as his measure of level of aspiration. Level of aspiration is a cognitive type of motivation in which the person concerned becomes involved in the task estimate and his own level of achievement. His experiences of success or failure guide him throughout the process to change his goal setting behaviour, facilitating the measurement of level of aspiration. Level of aspiration refers to a level of intent or expectation of accomplishment. Academic achievement is very much related with academic aspiration. Different effects on aspiration may result from achievement. The differences, however, may relate to other specific variables which are a part of the aspiration level.
Gardner (1940) found that if the performance equals the level of aspiration, the level of aspiration is lately to swing upward. Conversely an unattained desired level of performance leads to lowering the level of aspiration. Sears (1940) found that discrepancy scores (between level of success expected and success attained) for successful students were closely grouped in a small positive range, whereas the failure group revealed generally higher discrepancy which is large for those students who have experienced continual failure. So, success perpetuates goal setting and leads to a higher level of aspiration. Failure tends to lower the aspiration level.

Brim (1954) found that college grades and self estimates of intelligence were positively related. Also what one wants to achieve may affect what he believes to be true. Moss and Kagan (1961) in their longitudinal study of intellectual progress and achievement concluded that the child who attains scholastic honours is rewarded by those around him and that this experience frequently leads to an expectancy of future.

Miller and Hiller (1965) showed level of aspiration to be the most accurate single predictor of number of years of college completed. Likewise, educational plans and aspirations were positively correlated to academic achievement. Brookover et al. (1964) reported that experimental attempts to change self estimates of
mathematical ability lead to improvement in subsequent marks. Moulton (1965) gave ninety three senior high school male students, measures of need achievement and test anxiety. (The hypothesis tested was that a typical shift in aspiration level following success or failure should occur most often for the third group). He found that apparently, not only will goals set be determined by underlying variables in aspiration, but even the degree and type of shifts in goal setting are a feature of such traits. Success in learning tasks increased level of aspiration but their failure deflated it. Sewell and Shah (1968) found that educational aspirations were positively related to actual educational attainment (.78 for females .67 for males) in a population of Wisconsin high school senior. Brim et al. (1969) clearly showed that subjects with high education aspirations actively sought to find about their intelligence test performance. Those who were most often tested and best informed about their performances were the ones most motivated to acquire additional information. Students who have high self estimates of intelligence usually aspire to complete college.

Mohanty (1972) reported that there exists positive and significant relationship between average aspiration scores and examination marks. The high, middle and low achiever groups showed significant difference in their aspiration score before and after performance. On the whole, differences between the high, middle and low achievers were
statistically significant in the primary measures of aspiration either in one or both the tests of the level of aspiration but significant differences were not observed among the three groups in secondary measures of aspiration, which implied that the level of aspiration behaviour seemed to be related to academic success. Bisht (1972) found that a positive relationship was found to exist between attainment and the level of educational aspiration.

Edwards (1975) found that apparently, the consequences of actions determine direction and extent of goals which are established when we are successful, we are inclined to raise our sights; when we fail to lower them. Though a reasonable generalisation from the data is cited, the situation actually is not so simple. Accepting the principle, that performance influences level of aspiration, the question may be raised; does level of aspiration, wherever set, influence the consequent achievement? Church, Millward and Miller (1963), using sixty college students, attempted to answer this question, among others. Though, evidence was found that outcomes influenced predictions, none indicated that a prediction influenced achievement. Replications are needed to establish the validity of the finding. At this point it appears that desire will not influence results in any appreciable degree. One of the often quoted benefits of motivation (that one can be or do whatever one desires strongly enough) must be taken cautiously and perhaps even pessimistically.
Using bright academically successful and unsuccessful groups of high school males, Davids and Sidman (1965) had then performed on a motor task and predict performance, with knowledge of results, on each of two additional trials. They found that, as compared with academically successful boys, the underachievers performed less well on the first trial and showed a lower initial level of aspiration. Under conditions in which the underachievers met or exceeded their aspiration, they set a new goal quite similar to that of the group accustomed to success.

In so far as degree of brightness is an adequate criterion, variability in an unsuccessful group may be reduced and realistic aspirations set as a function of success and adequate information. This statement may be limited by the nature of the task used in this study and the speed with which feedback occurs. Davids and Sidman point out similar limitations in the study and advocate extensive investigations of relations among level of aspiration and such variables as praise and criticism, success and failure and the like. At the opposite end of the intellectual continuum, McCoy (1963) studied aspirations of educable retarded children. Level of aspiration was measured on two motor performance tasks. Among other things, McCoy found that the academically unsuccessful retardees set unrealistically high distant goals and unrealistically low immediate goals. The academically successful retardees, conversely were more realistic in the level of aspiration.
Hussain (1977) found that the major aim of the investigation was to study the academic attainment of university students in relation to the level of aspiration and anxiety.

The academic achievement of the group showing moderate goal discrepancy was better than that of the groups showing either higher or low goal discrepancy, implying a curvilinear relationship between the level of aspiration and academic achievement. Pandey (1979) found that significant relationship existed between adjustment, the level of aspiration and achievement. Moorjani (1979) found that the scores on coloured progressive matrices were positively related to the scores on the level of aspiration and self concept was also positively related to the level of aspiration. Gupta’s (1979) findings of the study were that there existed significantly high positive relationship between psychological stress and the various independent variables, namely achievement motivation, educational aspiration and the occupational aspiration. All these inter-relationships were linear.

Qureshi (1980) found that aspirations were related to creativity and its components. It correlated well with originality and creativity as a whole, however, it was not correlated with both fluency and flexibility.

Prince (1981) revealed that there was a highly significant relationship between the level of scholastic
achievement, socio-economic status and the level of aspiration for education.

Singh (1983) studied the effect of deprivation and level of aspiration on achievement in science and found a positive correlation between level of aspiration and achievement. Jasuja (1983) found that the level of aspiration did affect the achievement. Prakash (1984) found that out of the five, four factor interaction effects viz. area, sex, risk taking and locus of control, together showed significant interaction on level of aspiration. Pal, Jain and Tiwari (1985) found that the scholastic achievement significantly affected the level of aspiration of higher secondary level pupils.

Kumar (1986) assessed the amount of contribution made by level of aspiration and other variables to the academic attainment of the students and found positive correlation between these two variables.

Sabri (1986) found that athlete's performances were significantly correlated with their level of aspiration. Kumar (1986) assessed the amount of contribution made by ego-involvement, level of aspiration and other variables to the academic attainment of the students. The correlation between the examination scores and the four correlates was found to be positive.

There are some studies which report negative relationship between the level of aspiration and academic achievement. Cohen (1950) found that the relative level of
goals does serve some function in controlling probability of success. Thus, the higher the aspiration, the fewer the successes; and the lower the aspiration the greater the successes. Where the purpose is to attain success, set relatively low goals; where the purpose is to define terminal points, set high goals.

Muthayya (1961) found that scholastic achievement was not related to level of aspiration. The high achievers and low achievers in the scholastic field did not differ significantly in their aspiration patterns.

Sharma (1979) found that the level of aspiration did not influence academic achievement. The level of aspiration was significantly related to intellectual attributes and elements of self concept. The level of aspiration had favourable influence on mental health. There was a strong tendency in girls to set their level of aspiration below their achievement whereas boys showed an opposite trend. There was no significant sex difference in the level of aspiration among the age group under study. The level of aspiration was not significantly related with family income, birth order and vocational aspiration.

Mantro (1979) reported that the correlation between academic achievement and student's aspiration is positive and significant at 0.05 level only. Student's aspiration in case of arts group is higher as compared to that of the science group. Madho (1977) reported a negative correlation
between the level of aspiration as measured by the test of level of aspiration and academic achievement. The correlation was .045 which was not significant at the 0.05 level.

Sharma (1979) found that the level of aspiration did not influence academic achievement. Differences in academic achievement influenced the level of aspiration. Tara (1980) found that the negligible relationship existed between self concept, level of aspiration and interests at the pre-adolescent stage.

The main objective of Arora’s (1981) study was to identify the problems and to assess the degree of personality adjustment, self concept, level of aspiration and creative potential of the students studying in the professional courses of medicine, law, engineering and education. He found that problems were found to be negatively correlated with personality adjustment, level of aspiration and creative personality.

Dwivedi (1983) conducted a study to investigate the effect of the level of aspiration and socio-economic status on performance in a linear programme and found that the level of aspiration as a factor did not influence performance in a linear programme. Gautam (1986) found that level of aspiration as a factor did not affect the programme of the students. Gupta (1987) found that the level of aspiration correlated negatively and significantly with academic achievement.
The survey of above mentioned studies provides the necessary context for the discussion of the results of the present study in the light of the available researches. The subsequent chapter deals with the procedure of the study, including the tools for data collection and the techniques for the statistical treatment of the data.