CHAPTER II

A REVIEW OF THE RELATED LITERATURE
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2.1 INSTRUCTIONAL DESIGN AND ACADEMIC PERFORMANCE

One independent variable of the study is Instructional Design which has been studied at two levels. One level is the design based upon 'linear style' of programmed instruction and the other is in the form of 'adjunct programme'. The treatment of the subject matter, sequencing of different sub-topics, illustrations, examples, analogies, etc. have been kept as far as possible, similar in each of the two levels under study.

Many attempts have been made from time to time to compare programmed instruction with other methods of teaching.

Hartley (1970) suggested that it was difficult to compare different educational methods, the real difficulty lay in doing it precisely and in generalizing the results.

Keisler and McNeil (1961) studied the effectiveness of autoinstructional method for teaching science and mathematics to primary graders. The difference between the experimental group receiving instruction and an uninstructed control group was clear and significant.

Hughes and McNamara (1961) found the superiority of programmed instruction over the lecture method both on
post-test and in time needed to complete the course. 

Bruce (1962) conducted an experimental study on a course on photography. Result was in favour of programmed instruction.

Donnell (1962) found as a result of his experimental study that experiment group learning by programmed instruction achieved significantly higher than traditional group.

Hughes (1962) discovered that the minimum scores of programmed instruction group was between 65-69, only 11 percent of this group scored below 90, compared to 55 percent of the controlled group.

Henderson (1963) and Ripple (1963) supported the superiority of the programmed method of instruction over traditional lecture method. Holt (1963) also concluded as a result of his study that programmed instruction was better than conventional instruction in terms of test and retest results.

Bertrand (1964) also conformed to the above results. Myers (1965) found significant difference at 5 percent level in favour of programme instruction for teaching mathematics. Sharma (1965) developed a programme in Geography and compared it to 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) and Farber (1965) also found programmed instruction to be better than traditional methods.
Hartley (1966) compiled a comprehensive list of the studies comparing programmed instruction and conventional instruction. It appears from his analysis that programmed instruction is superior to traditional method of instruction.

Dessi (1966) studied the relative effectiveness of programme instruction and traditional method of classroom teaching. The difference was significant at .01 level of significance, in favour of programme instruction.

Mullick (1968) used programmed lesson for B.Ed. students in correspondence course and found that the results were strongly in favour of programmed lessons.

Gleason (1968) reported that if programmed instruction is utilized, the class on the whole benefits by the way of "Systematic analysis of the teaching - learning process and determination of the most effective means of instruction". Daniel (1968) also found that programmed automated self-paced method of teaching resulted in a better student achievement than a conventional method.

Barnes (1969), Shah (1969) and McTanney (1970) also found programmed learning to be a superior method of teaching as compared to traditional methods.

Rouhausen (1972) showed programmed instruction to be an effective method in kindergarten and first grade.

Vernon (1973) compared a self-paced programmed instruction for typing with teacher directed non-programmed
instruction. The results of his study favoured programmed instruction as a better method of teaching.

Harris (1973) found programmed instruction to be more useful method for teaching English. Sennet (1973), Tipplings (1973) also found P.I. to be a better method of teaching.

Jeanluc (1974) employed programmed method and trial and error method for teaching mentally retarded children and found that programmed condition resulted in errorless learning in most cases, while trial and error method produced errors. Studies of Anderson (1974), Long (1974) and Lawrence (1974) also established superiority of programmed instruction.

Brock et al (1975) described the application of personalized System of Instruction (PSI) to a naval training programme in propulsion engineering. It was discovered that introduction of PSI reduced the learning time by 20 percent over the previous lockstep technique.

Vinett et al (1975) experimented with 27 children of sixth grade and found that individualized instruction sharply increased the academic performance of students from all ability levels.

Arimoto (1976) concluded after a study on 204 students of fourth grade that individualized programmed instruction influences class-room learning effectiveness. The result of
Sieman’s (1976) study indicated P.I. to be an effective method for transmitting information.

Dean (1977) found as a result of his study that P.I. resulted in better students’ achievement than a conventional method.

Anchor and Smith (1978) were of the view that P.I. in inter-person facilitative behaviour is seen as having potential for inclusion in training in psychotherapy.

Gupta and Gupta (1979) found as a result of their study that low achievers benefit a lot by programmed instruction.

Leons (1980) compared P.I. and conventional classroom methods of teaching and found that P.I. group had greater post-test minus pre-test scores than those of the conventional group. In addition to it, experimental group learnt more than 80 percent of material and felt less pressure.

Results of Brown’s (1980) study favoured the individualized instruction, indicating that the individual instruction seemed to be associated with better achievement. The effect was found to be small (1.2 percent of the variance) but significant.

Gredler (1981) investigated the effectiveness of a programmed unit in reading for one white and eleven black
students, with mean I.Q. of 81.33 and found that a significant improvement was found in reading.

Waters (1981) compared the academic achievement of experimental group using programmed plan and control group using conventional methods of teaching. The findings substantiated the assumption concerning the importance of programmed plan of study.

Emery (1981) compared the effectiveness of conventional programmed instruction (PCI), Multisensory Programmed Instruction (MPI) and Conventional Classroom Instruction (CCI). Results showed Multisensory Programmed Instruction to be superior to both PCI and CCI, though no significant difference between PCI and CCI was found.

Gupta (1983) conducted a study on 60 low achievers of Class XI. The result showed that experimental group which was taught by P.I. was superior both in terms of retention and quantity.

However, there are some studies which do not support the view that programmed instruction is a superior method of teaching. Oakes (1960) could not find any significant difference between the achievement of traditional group and programmed group.

Zuckerman, Marshall and Georesberg (1961) used items of Ohm's law and circuits with college students to compare
the effectiveness of text book, lecture method, a programmed booklet and a teaching machine. They found out that the text book method was the most effective, followed by lecture method and P.I. The teaching machine was found to be the least effective.

Holt (1962) found the traditional group and P.I. group to be equivalent in performance.


Bhushan and Sharma (1975), while comparing P.I. and lecture method, found the lecture format to be better.

Jernstedt (1976) compared P.I. with traditional lecture examination format. The performance of P.I. group was found to be better on essay examination and traditional group on multiple choice examination.
Fairbrother (1981) compared the relative effectiveness of P.I.* Textbooks and lecture method. Non-significant F-ratios were obtained from the analysis of variance when scores of the three groups were compared.

Dean (1981) compared teaching guides with programmed instruction for teaching statistics. An analysis of co-variance revealed that there was no significant difference between scores of the study guide group and programmed instruction group, though, both the groups were found to score higher than the group receiving instruction through the traditional method.

Duke (1981) conducted a study to determine the effectiveness of the programmed text as compared to teacher instructed Houghton Mifflin mathematics programme. No significant difference was found on statistical analysis of the data.

Ronhausen (1974) studied the effect of programmed tutoring on achievement of first graders in the subject of mathematics. Findings indicated that the combination of programmed tutoring and regular classroom instruction was more effective in increasing achievement than regular classroom instruction alone.

Cokawood (1980) compared the relative effectiveness of Traditional Instruction assisted by Computer Instruction
Traditional Instruction assisted by P.I. and Traditional lecture/Text book approach. The major findings failed to support definite conclusion regarding which of the three methods of instruction was the most effective.

Yassin (1980) conducted a study to compare P.I., combination method and Traditional method. Result showed that combination method was superior to the traditional method.

Walker (1980) found as a result of his study that utilization of conventional lecture - discussion supplemented by programmed text did not provide educators with a strategy for significantly improving the mathematics achievement.

Mayer (1981) is of the view that as both P.I. and traditional method of instruction have benefits to offer, it is best to follow both types of instructions in proper mix.

Sansanwal and Joshi (1981) developed an instructional strategy at B.Ed. level comprising programmed learning material. Library work, discussion and unit test were the other components of the strategy. The instructional strategy was found to be effective to the extent that the 70 percent of students got above 70 percent of marks on criterion test.
Hattingh (1976) concluded that P.I. 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.

2.2 INTELLIGENCE AND ACADEMIC PERFORMANCE

Since the introduction of intelligence test by Binet and Simon (1916) enormous research has been done to establish empirically the relevance of intellectual abilities for explaining variance in academic performance. Earlier studies of Hollingworth and Cobb (1923), Terman and others (1925), Carroll (1930), Pintner (1931), Strang (1937), Duyting and Gregory (1941), Emmet (1945), Portenier (1948), Newan, Duncan, Bell and Brandt (1952), Sanford (1952), Wedemeyer (1953), Bliesmer (1954), Gowan (1955), Kulshrestha (1956) and many others showed that superior intelligence was associated with high academic performance.

Reviewing about 600 titles, Eysenck (1947) concluded that under normal conditions the range of correlations of intelligence test scores with college marks was 50 to 60. Stephens (1960) and Rao (1963) concluded after scrutinizing vast literature in the field, that extent of correlations varied from .1 to .9. Sahay (1961) and Silberman et al. (1961) found a significant relationship between intelligence and amount of learning.
Briggs (1962), Mitchell (1963), Keller and Rawley (1964) found that intelligence was the major factor influencing academic achievement. Griffin and Flaherty (1964) obtained a correlation of .63 between Scholastic Aptitude Test and Grade Point Average.

Torrance (1965) concluded as a result of his study that children with more intellectual skills and capacities are likely to accomplish more on academic tasks and jobs that require such skills.

Sheffield (1966), Vane (1967), Dibble (1967), Cuppen (1967) and Lewis (1967) found that intelligence was the major factor influencing academic achievement.

Filep (1967) conducted a study on 1222 students of class eight and used linear and branching programmes for teaching. His results showed that total IQ scores provided the highest correlation with the dependent variable of achievement.

Marjorie (1967) found that intelligence quotient correlated positively and significantly at the one percent level with all the measures of school attainment except achievement in arts.

Mohan (1968) found that intelligence and achievement were highly and significantly correlated at all the three levels explored (10-15 years, 15-20 years and 20-25 years).
Rattan and MacArthur (1968) reported a highly significant \( r \) of 0.57 between the two variables. Simpson (1970), Diwan (1970), Pandey and Singh (1970), Bruininks and Lucker (1970) and Kakkar (1970) found positive correlations between the scores of intelligence quotient and performance.

Willie (1971) investigated that significant correlation exists between IQ scores and achievement percentile, pupil grade and children's rank in class for grades fourth, fifth and sixth.

Dhallalal (1971) found a \( r \) of 0.52 between intelligence and achievement. Berman and Eisenberg (1971), on the basis of review of previous literature and their own findings concluded that exceptionally high achievement in final high school examinations correlated significantly with high I.Q. Sinha (1972) also reported a positive relationship between the two variables. Reddy (1973) too exhibited that the scores of Culture Fair test of intelligence were associated with examination marks in various subjects at the University level. Twaranovica (1974) conducted 470 studies and found that relationship between measured intelligence and components of school achievement spanned a wide range but with a discernible tendency towards being positive. Lewis (1971) found intelligence and academic achievement to be highly correlated.
Predictive validity coefficients of .29 to .43 were obtained by Lamp et al (1973) between Solosson Intelligence Test (SIT) and the achievement test scores.

Yoloya (1973) attempted to study the extent to which Thorndike Intelligence test predicted success in West African School Certificate examination. Both the verbal and non-verbal components of the test were administered to 150 students from three secondary schools in their first and fifth years in school. The School examination marks were taken as the index of achievement in various school subjects. Correlations between sub-tests of both the instruments varied from .05 to .70.

Bauman (1973) revaluated the use of group IQ as predictors of academic grades and high school completion in the light of recent changes in the school curriculum. The correlation between IQ and grades in vocational courses was lower than the one found between IQ and academic courses. It was suggested that a minimal IQ of 80 was required for the success in vocational course and a minimal IQ of 100 required for the academic programme.

McCormic (1975) studied the accuracy of Otis Lenon test scores along with other affective measures like test anxiety, general anxiety and self-esteem for the prediction of composite achievement as well as reading and arithmetic
achievement scores. Out of all the tested variables, intelligence appeared to be the most potent predictor.

Kumaraiah (1976) emphasized that along with non-intellectual factors, scores on progressive matrices consistently differentiated high and low achievers at all stages in undergraduate medical education.

Mallik (1977) found the relationship between intelligence and achievement to be positive and significant. Tabacman (1977) expressed verbal intelligence to be a significant factor in determining achievement though this was not true for non-verbal intelligence.

Ammerjan (1978) as a result of his study concluded that high achievers have higher mental abilities. Bahriti-Fuchs (1978) claimed that Pearson-product moment correlations between intelligence test scores (verbal plus non-verbal) and combined achievement raw scores (reading and mathematics) resulted in $r$ of .82 for males and .80 for females.

Farmer (1979) also found that among the first graders the Slosson Intelligence test scores and Gates-Mac-Ginitie Reading test scores were significantly related both for boys and girls.

Lawerence (1979) attempted to test the importance of fluid and crystallized intelligence as the predictors of achievement. It was found that crystallized intelligence
significantly correlated with fluid intelligence \((r = .52)\) and with test performance \((r = .27)\). Crystallized intelligence was found to be significantly correlated with achievement, even when the effect of fluid intelligence was partialled out. However, same result could not be proved on partialling out crystallized intelligence.

Rogers (1979) studied the effect of intellectual and non-intellectual factors on the achievement in subjects of English, Mathematics, Social Studies and Science. He discovered that global and academic self-concept scores were surpassed by IQ scores in their value as predictor of achievement at high school level.

Gose, Wooden & Muller (1980) conducted a study on 47 males and 49 females of sixth grade and found that intelligence combined with self-concept accounted for substantial portion of achievement variance.

Alberta (1980) found a significant difference between mathematic grade equivalent score of intellectually superior and intellectually average students. It was found that intellectually superior students achieved higher on the composite scores.

Riedel (1980) found the relation between IQ scores and achievement scores to be positive and significant.

Watkins and Astills (1980) in an investigation with
Filipino High School girls found school achievement to be correlated with IQ to the extent of .64.

Lavizzo (1981) established significant positive correlations between IQ and reading achievement and arithmetic scores.

Srivastva & Dubey (1982) found a positive significant correlation between these variables for girls of Arts group.

Wroble (1982), as a result of her study found that intelligence and self-concept were most highly correlated with residual scores.

Krishna and Agarwal (1983) discovered that reading ability tends to exhibit significantly positive association with verbal as well as non-verbal intelligence.

Freeman (1942) on the basis of his studies, concluded that correlations between IQ and academic achievement ranged between .40 to .60. Crawford and Burnham (1946) reported the correlation range to be from .60 to .65. Carter (1950) reported correlations ranging between .45 and .50 for the two variables.

Stephens (1956) reported correlations between class achievement and intelligence to be .10 to .90. The correlation worked out by Uppal (1970) between intelligence and algebra score was .306.

Thus, we see that there are wide variations in the
correlations which may be attributed partly to the use of different types of tests and different sample compositions on the basis of sex, as suggested by Lavin (1965).

However, there have been studies, which fail to show any significant relationship between these two variables and there are some others which show even a negative correlation between the two. Porter (1959) found while teaching spellings that there was no significant relationship between intelligence scores and achievement of the groups taught with machines.

Stoulrow (1962) found that mental age did not correlate significantly with any of the scores based upon self-instructional material in logic, mathematics and statistics.

Green and Farquhar (1965) found a very low and negative 'r' of -.01 between these two variables.

Pelachano (1972) too, pointed out that intelligence was not systematically related to academic performance.

Safer and Allen (1973), Lamanauksas and Burrow (1973) also could not find any correlation between reading ability and intelligence. They were of the view that reading ability should not be considered a phenomenon confined to average or above average IQ, since there are good and poor readers at all intellectual levels.

2.3 SELF-CONCEPT & ACADEMIC PERFORMANCE

The studies of Harris (1931, 1940), Eme (1942), Garrett (1949), Gouan (1960), McCormick (1975) and Rogers (1979) resulted in the emergence of self-concept as a variable that affects academic performance with vehemence. A number of studies, hence, have been designed and conducted to study this factor as a variable of educational success.

CooperSmith (1955) found a correlation of .36 between positive self-concept and school-achievement.

McCandless (1961) predicted that poor self-concept affects the performance of a child at school adversely. Shau and Alves (1963) found that bright under-achievers had negative self-concept. Bledsoe (1964) found that self-concept and achievement in academics are positively correlated to a significant degree. Brookover et al. (1964) concluded, after studying 1050 eighth class students, that a significant positive relationship exists between self-concept and performance of students. Shailer (1964) was of the view that achievement could be improved by enhancement of self-concept. Rosenberg (1965) also reached the same conclusion as a result of his independent study.
Millet (1965) found significant differences which indicated that acceptance of self and satisfaction with it appear to be related to achievement.

Lansman (1969) found that significantly lower negro achievement test scores as compared to white achievement test scores were because of negative self image of the negro children. Mehta (1968) also discovered that under-achievers were characterized by negative self-concept.

Geisler (1969) found that a high degree of correlation existed between self-concept and academic achievement.

Stanford (1969) using a branching programme found that children with high self-concept achieve significantly higher than those with low self-concept, the difference being significant at .01 level of confidence. Renbarger (1969) identified a positive relation between the self-concept and academic achievement. He demonstrated that the students who gained in self-concept showed similar gains in academic achievement and vice-versa.

Sproull (1969) discovered as a result of his experimental study that higher the self-concept of Academic ability of high school males, the more likely they are to have a higher grade point average in the first term at college.

Robinson (1970) found that students' academic self-concept had a correlation of .31 with success criterion.
Friedman (1970) concluded as a result of his study that intercorrelations between self-concept disparity scores and variable of achievement were low but statistically significant. Fischer (1970), after studying 400 subjects found that high academic self-concept subjects performed at significantly higher level than low academic self-concept subjects. Even when they were matched on IQ high significant correlations between the academic self-concept and achievement criterion scores were found.

Mohammad (1970) conducted a study on 97 college freshmen and found a positive and significant correlation between the variables of self-concept and academic achievement. Morakinyo (1970) designed a study to ascertain the existence of causal relationship between enhancement of self-esteem and a concomitant improvement in academic performance. It was found that enhancement of self-esteem by itself was a sufficient condition for improvement in academic performance.

Lewis (1971) studied 152 Negro students and reported that high achieving boys have higher self-concept than that of low achievers. However, these results could not be verified with girl students. Siduwi (1971) reported a correlation range of .37 to .54 between self-concept of academic ability and school achievement of seventh and ninth grade boys of Beirut Public Schools. Prawer (1971) found the correlation between self-concept of ability and foreign language grade
to be significant at .01 level of confidence. Peeke (1971) reported the existence of a significant positive relationship between the two variables. Sally (1972) found that reading achievement was significantly related to school self-concept of primary graders. Vasanth (1972) investigated the relationship between self-concept and achievement for 686 undergraduate students. He found that backward community subjects had low self-concept scores along with low achievement. In his study, self-concept proved to be a facilitating factor in achievement. Emmanuel (1972) and Norma (1972) too reported a positive correlation between self-concept and academic achievement. Barton & Disme (1972) found that self-concept is significantly correlated with mathematics, reading and science achievement scores.

Abbat (1973) reported that low achievers of third grade had low self-esteem. Jewel (1973) conducted a study on 3rd, 5th, 6th, 7th and 8th graders and found a significant, positive correlation between the two variables. Paul (1973), Krupazak (1973), Smith (1973) and Munic (1973) too, reported the same results. The result of Kaufman's (1974) study also showed that some training in self-concept shows improvement in reading. Coley (1974), Calyson (1974), also reported a positive relationship between self-concept and academic performance. Hybertson (1974) reported that for different ethnic groups and for both the
sexes of grade three students self-concept is significantly related to achievement. Pruneda (1974) conducted a study on 270 students and found that the mean academic achievement scores for 6th and 8th grade students with high self-concept were significantly higher than those with low self-concept. The results of studies of Joseph (1974) and Vilhoti (1974), also fell in line with the above findings. Cole (1974) indicated that self-concept and achievement were significantly correlated with achievement of third grade children. Larry (1975) studied 144 Japanese-American Sanseis and concluded that positive self-concept is correlated to academic achievement. High achievers were found to have significantly more positive self-concept than low achievers. Lewis (1975) also found a significant positive relation between these two variables. Mintz (1975) discovered that specific self-concept measures which are related to school yielded a weak \( r = .39 \) but positive relationship to achievement. Ohlenkamp (1976) also reported low but positive correlation between these two measures. Richard (1976) concluded that students who achieved high in biology had high self-concept in science.

Mintz and Muller (1977) reported that success self-concept, peer-acceptance self-concept and total self-concept, significantly correlated with achievement. August (1977) found that children with high self-concept recalled
positively related words more readily than negatively related words. McCarthy (1977) also reports a significant relation between the two variables. Rogers and Smith (1978) found both reading and mathematics achievement scores to be significantly related to self-concept scores.

Iskovich (1977) found that high self-concept children solved more puzzles. Results of Adrian's (1978) study showed that there is positive relationship between reading achievement, science and mathematics achievement, and general self-concept of ability and self-concept of ability in Mathematics, English and Science.

Bagby (1979), McClary (1979) and Jordan (1979) too reported an association between Self-concept and academic achievement.

Goss et al (1980) studied 49 females and 47 males of sixth grade and discovered that achievement was correlated to academic Self-concept but not to other aspects of the self-concept. Mayer (1980) indicated that causal relationship between self-concept and academic achievement is most consistent in nature. The findings of the study of Litwack (1980) revealed a correlation of .270 between the students' score and their self-concept. Savicky (1980) found a significant positive correlation between the two variables. Jacobowitz (1980) studied 281 students of grade eight of
Public Junior School of New York and found a moderate correlation between science achievement and science self-concept. Koelle (1981), however, concluded as a result of his study that self-concept correlated significantly at \( .01 \) level with all the sub-tests.

Bulbul (1981), Robinson (1981) and Hahn (1981) found positive intercorrelations between self-esteem and academic performance. It was evident from the study of Zervas (1981) that association among self-concept measures and science achievement was positive. Uroble (1982) reported that intelligence and self-concept scores are highly correlated to residual scores. Kachoyanos (1982) found a significant relation between grade point average and self-esteem. Smith (1983) studied UK undergraduate students and his study indicated that self-concept accounted for 36% of the variability in grade point average.

However, there are some studies, which report no correlation between the variables of self-concept and school achievement. These studies reveal that low self-concept children can achieve as much as those with high self-concept.

Mitchell (1959) reported that a group of self-rejecting women did as well as self-accepting women.

Peters (1968) reports that self-concept as measured
by 'Tennessee Self-concept Scale' is not significantly related to over and under achievement. Study of Frederic (1969) could not determine, whether higher self-concept resulted in higher achievement or not. Dwyer (1969) says as a result of his study that correlation coefficient between final self-concept and academic achievement indicated that in no group is the relationship high enough to be significant at any level. The correlations he obtained were inconsistent. Morekinyo (1970) expresses his view that enhancement in self-concept by itself is not a sufficient condition for improvement in academic performance. Meighan (1970) conducted a study on the visually handicapped adolescents and found that no significant relationship exists between self-concept and academic achievement.

Velma (1971) could not find any significant difference between the self-concepts of high and low readers. Gillman (1970) also could not find any significant correlation between the two measures, though his study did show a tendency towards a positive correlation. Moore (1972) concluded as a result of his study that self-concept, though important was not a sufficient factor to determine achievement in mathematics.

Richard (1973) using the Pearson-product-moment correlation coefficient formula found that no significant
relationship exists between self-esteem and achievement. (p .05). Harold (1975) indicated as a result of his study that the relationship between self-esteem and reading achievement, though positive, was not large enough to be a predictor of success. Byron (1976) after studying sixth grade male students reported that no significant relationship existed between these two variables. Fredman (1976) reported that neither global, nor school self-concept had any significant relationship with achievement. Edward (1976) found as a result of his study that magnitude of correlation between self-concept and academic achievement is too low to be significant. Saio (1977) and Gold (1978) reported that self-concept does not affect achievement.

Cotton (1980) conducted an exploratory field based study and found that for the total group of adult students, there was no significant relationship between the variables of self-esteem and academic achievement. However, for one sub-group there was positive and significant relationship.

Analysis of variance of Morford's (1980) study showed no significant difference between self-concepts of high and low achieving gifted students. Taylor (1980) found a zero-order correlation coefficient of reading achievement test with Academic self-concept.

Watkins (1981) found that physical self-concept was not correlated to academic performance. Haynes (1981) also
could not find any significant correlation between the two measures. Baughman (1982) reported that self-concept did not successfully predict success in learning of communication skill. Smith (1982) conducted a study on 95 freshman black students. The cross tabulation analysis of students' self-concept scores with their achievement test scores and their grade point average did not yield high or moderate $r$.

McGlynn (1983) studied 37 non-learning and 34 learning disabled students. The results were not indicative of overall differences in self-concepts of learning disabled and non learning disabled groups. Gourgey (1983) conducted a study on 92 adults; 16 males and 76 females and found that mathematical self-concept was not significant predictor of arithmetic skills.

2.4 ACHIEVEMENT - MOTIVATION AND ACADEMIC PERFORMANCE

It has been observed that academic performance is affected by achievement motivation. Researches of Cattell & Butcher (1968) found that variations in achievement are accounted for in equal measures by ability, motivational, personality and environmental factors.

Atkinson (1964) assumes that, "n-Achievement would be positively related and test-anxiety negatively related to the levels of achievement oriented performance".
Butler (1977) is of the view that the learner must have need, to learn if there is to be much learning of any consequence.

Many psychologists have conducted studies to find out the effect of achievement motivation on academic performance. Harris (1940) found that motivation was the most important non-intellectual predictor of success. Morgan (1951, 1952) found positive correlation between need achievement and achievement of students. 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. Strodbeck (1958), Rosen (1959), Weiss et al (1959) found as a result of their separate studies, that a positive significant relation exists between the two variables. Pierce and Bowman (1960) and Unlinger and Stephen (1960) found a moderate but positive relation between need to achieve and achievement. Atkinson and Litwin (1960) reported a positive correlation between n-Achievement and performance in examination. Gough (1964) found that the achievement motive scale and achievement correlated .32 for high school mates.

Litting and Yacacaris (1963) also reported a positive significant correlation between these two variables. Lawrence and Constantine (1963) reported that achievement motivation and achievement are related to each other for men but not
for women.

Finger & Schlessor (1965) studied the non-intellective factors that affect academic success and observed as a result of their study that at junior high school level, this relationship cannot be studied properly as parental expectations may interact with 'embryonic academic motivation'. Caplehorn & Sutton (1965) found a moderately significant positive relation between the two variables. Green and Farquhar (1965) found as a result of their 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.

Davids (1966) studied the psychological characteristics of high school male and female potential scientists and discovered that high achieving boys have high n-Achievement. Irvin (1967) found a positive relationship of .38 between n-Achievement and academic performance. Lakshami (1967) highlighted the relationship that exists between the rate of learning and achievement motivation of high school boys. Ringnes (1967), Tamhankar (1967) and Bhatnagar (1966) reported that over achievers have higher n-Achievement. Right and Sassernath (1966) reported that high achievement motivated students performed better on three criteria; (i) time to complete programmes (ii) number
of errors and (iii) short-term retention score, than did students with low achievement motivation.

Entwistle and Welsh (1969) conducted a study on 2538 school children and found that academic motivation was positively related with achievement. It was significantly higher for high ability groups of both the sexes. Mehta (1969), Birney (1969), Sinha (1970) and Song (1971) found that higher n-Achievement leads a student to higher performance. Vernon (1970) found that motivational variables have significant relationships with performance.

D’Ahea (1970) concluded that n-Ach. and academic achievement were significantly related. De.B. and Priya (1972) found significant relationship between achievement motivation and educational level.

Mehta (1973) also found a significant positive correlation between n-Ach. and academic achievement. Pelochano (1973) concluded after studying 82 female students of sixteen years average age that though intelligence and personality variables were not systematically related to academic performance, yet some motivational variables were found to be significantly related. Dutt and Sabharwal (1973) found the magnitude of correlation between academic achievement and n-Ach. to be 0.45. Narang (1974) found the correlation between the two to be .524, which is
significant at .01 level of significance. Eklof (1973), Olson (1973), Josepl (1977), Johnson (1975) and Lloyd (1977) as a result of their studies found that higher achievers have higher motivation to achieve than under achievers. Calhoun (1975), Medhi (1977) and Padah (1977) found that variable of motivation was significantly related to the post-test mastery scores. Vora (1977) found a 'r' of .15 between reading comprehension and n-Ach, which is significant at .01 level of significance. The study of Caldwell (1977) indicates that level of motivation may be a determining factor for the academic success. Mallik (1977) found that n-Ach and academic achievement are slightly correlated i.e. n-Ach is a help in achievement in the subject of chemistry to a little extent. Gupta (1978) also found a positive relationship between the two variables.

Crawford (1978) investigated 152 college students, learning from programmed material and discovered that Ss with high n-Ach did better on the post-test than Ss with low n-Ach. The statistical analysis of Mazzilli's (1980) study indicated that over achievers had higher total motivation scores than the under achievers.

Gordon (1981) found that motivation is significantly correlated with achievement in written English. Barki (1982) found that high achievers have high n-Ach.
However, there are some researchers, who found either no or negative correlation between these two variables. Parrish & Rethlingshafer (1954) and Lazarus et al. (1957) found a negative correlation between n-Ach and achievement. Hills (1958) concluded as a result of his study that results related to the relationship between these two variables were confusing and not impressive.

Broverman et al. (1960), Cole et al. (1962) and Smith (1964) in their separate studies found a negative relationship in existence between n-Ach and academic performance. Dotty and Dotty (1966), Shaver and White (1966), Mingione (1968), Fedell (1971), Girija et al. (1975) and Margol (1980) found no significant correlation between the two variables. Cazzel (1971) expressed the view that achievement motivation scores were not favourably related to grade point average.

Hartley, Holt and Hogarth (1971) failed to find any significant relationship between motivation and performance, when method used for teaching was programmed instruction.

Simmon & Bibb (1974) studied the relationship between under achievement and the need achievement and discovered that lack of need to achieve was not related to under achievement.

Sundaram (1981) conducted a study on 61 students of
B.A. Part II of Madras. He could not find any positive relation between performance and n-Ach. Gokulnathan (1979) conducted a study on tribals of Assam and could not find correlation between need to achieve and performance.

The survey of these studies provides the necessary context for the discussion of the results of the present investigation in the light of the available researches. The subsequent chapters contain the procedural details of development of the tools, data collection, analysis of the results and conclusions and generalizations resulting from the research in hand.