Chapter II

REVIEW OF RELATED STUDIES

As discussed in the previous chapter, the present study is an attempt to investigate into the phenomenon of over and under achievement in different school subjects and to identify personality characteristics differentially associated with over and under achievement in each of these subjects.

It is since the publication of Thorndike's monumental work on the concept of over and under achievement in 1963, that the attention of the research workers has been diverted to the definitive and operational aspects of over and under achievement as well as its relationship with certain personality variables. As such, the number of studies is still not very large. Mostly studies have dealt with single factors of personality and measures of over all achievement of the subjects under study. Studies exploring the related personal factors more comprehensively are few and those dealing with over and under achievement in different school subjects fewer still.

A review of research work done in the field of over and under achievement and the related areas, therefore, seems to be
necessary and beneficial as it would provide a factual base for the work in hand and be helpful in understanding the present problem in its right perspective.

Studies on Intelligence and Academic Achievement

As the present investigation focuses on the residuals of intelligence predicted achievement, a survey of important studies yielding the relationship between cognitive ability and scholastic achievement would not be out of place for understanding the operational field of intelligence, as a predictor of academic performance. There have been innumerable studies on the relationship between intelligence and achievement since the very inception of measured intelligence, yet it would be relevant to review the findings of more recent and important investigations only.

McCandless, Roberts and Sternes (1972) conducted a valuable study on intelligence in relation to scholastic achievement. The study was conducted on a large sample of 443 seventh grade school children with the California Test of Mental Maturity for obtaining intelligence scores. The correlation between intelligence and academic achievement, G.P.As, including reading, language, arithmetic, social studies and science, was found to be as high as .56.

Chatterji and Mukerji (1974) also attempted to investigate
into the prediction of achievement through the Differential Aptitude Test Battery scores. The sample consisted of 1,042 VIII class students. Highly significant relationship to the extent of .01 level was found between the aptitude scores and the total marks of the subjects. The correlation coefficients, with an exception in the case of clerical aptitude, ranged from .21 to .49.

Glossop, Appleyard and Roberts (1979) studied achievement in relation to general intelligence using the Manchester Reading Comprehension Test and Vernon's Graded Arithmetic-Mathematics Test as achievement measures and Heim's A.H.4, Test as a measure of general intelligence on a sample of 178 pupils aged 15-16 from the fifth form of a comprehensive school. The results showed a positive linear relationship between intelligence and achievement scores. The correlation coefficient of intelligence with mathematical ability was found to be 0.805, and with reading ability 0.815.

Crano, Messe and Rice (1979) conducted a comprehensive study on the predictive validity of mental ability for classroom performance on a large sample of 5,200 elementary school children in England and Wales. Standardised achievement test battery and NFER mental ability test were employed to obtain reliable achievement and ability scores. The investigation based on correlations between the two abilities yielded a 'strong predictive relationship' between mental ability
scores and classroom performance, the correlation coefficients ranging from .474 to .505.

Roberge and Flexer (1981) conducted a study on the relationship between intelligence and academic achievement. The achievement scores on reading and mathematics were correlated with intelligence scores on Lorge-Thorndike Intelligence Tests. High positive correlations were obtained between mental ability on the one hand and reading, mathematical concepts, and mathematical problems solving on the other, the coefficients of correlation obtained being .58, .61 and .61 respectively.

Yule, Lansdown and Urbanowicz (1982) carried out a study on prediction of educational attainment through intelligence. The investigators employed revised Wechsler Intelligence scale for children (WISC-R), for measuring intelligence and for achievement measures they used Neale Analysis of Reading Ability, Form A and Vernon Graded Word Spelling Test and Vernon Graded Arithmetic-Mathematics Test. The sample consisted of 160 children. The results showed very high relationship between intelligence scores and achievement scores, the coefficients with different aspects of reading ability and Mathematics ranging from .457 to .911.

The studies discussed above stand testimony to the fact that the factor of intelligence is very closely
associated with academic achievement and as such a very reliable predictor of school performance. But at the same time it also becomes quite evident from the results that the relationship between the two is not perfect. Intelligence as a predictor leaves out certain amount of "residual", a part of the data on achievement lying beyond the prediction through intelligence.

This residual phenomenon has very much attracted the attention of the researchers in the field and as discussed earlier, the concomitants of 'the residual' have been explored in the non-intellective domains of personality and temperament. However, in their efforts to identify the personality dimensions which could account for the residual part of academic achievement many of the workers in the area have missed the point of "residual" of achievement beyond the level predicted by intelligence and have simply studied the relationship between academic achievement and certain personality factors.

**Studies on Personality and Other Non-cognitive Factors in Relation to Academic Achievement**

Studies yielding differential personality and temperamental characteristics going with high and low scholastic performance are abounding in number. A review of some important research work in the field might suggest the personality
dimensions to be explored as the possible concomitants of over and under achievement.

An attempt in this regard was made by Eysenck and Cookson (1969) who conducted a study on 4,000 eleven year old boys and girls to investigate the relationship between scholastic performance, scores on ability tests and certain personality variables. The investigators employed Moray House Test for measuring ability and Schonell Graded Word Reading Test for achievement. Junior Eysenck Personality Inventory and Teacher ratings were used for temperamental variables.

The results showed a close inter-relationship between intelligence, school achievement and certain personality dimensions.

Extroversion went with scholastic success, the coefficients of correlations ranging from .19 to .22. Neuroticism was found negatively correlated with academic achievement yielding "smaller but still highly significant correlations" that ranged from -.06 to -.11. As for mental ability and scholastic performance, the correlation coefficients were found to be the highest, ranging from .68 to .94.

Entwistle and Welsh (1969) carried out a study on 2,538 Aberdeen children, between 10 and 14 years of age with the purpose of investigating into the relationship between academic achievement and certain non-intellectual
variables at different ability levels. Teachers' marks from all academic subjects were averaged to serve as measure of achievement. Junior Eysenck Personality Inventory and Entwistle's Academic Motivation Inventory were used for obtaining scores on personality dimensions. For measuring intelligence the study employed Moray House Verbal Reasoning Test 72, and N.F.E.R. Non-verbal Reasoning Test 1. Socio-economic ratings were also derived from the Registrar-General Scale of Occupations, and served as an index of socio-economic status.

Boys and girls were studied separately and an attempt was made to identify possible sex differences.

The results showed no sex differences in the relationship between socio-economic status and school achievement, but high social class and school achievement were closely associated variable.

The results also showed that the school achievement for low ability group was more predictable on the basis of intelligence level than that for the high ability group. Academic motivation on the other hand, was found to be more closely associated with school attainment for the high ability group than it was for the low ability group.

It was also found that in the high ability group extroversion was negatively correlated to academic achievement
while in the low ability group, the relationship was positive.

Jensen (1973) investigated the relationship between extraversion, neuroticism and lie, as personality factors, and academic achievement in three ethnic groups of school children, namely, White, Negro and Mexican-American. Low but significant correlations were found between all the three personality variables and academic achievement for all the three ethnic groups. Extraversion was found positively correlated with academic achievement and neuroticism was found negatively correlated with school achievement. The three ethnic groups did not differ significantly with one another on any of the three personality achievement measures. Thus ethnicity was not a discriminative factor with reference to personality and achievement.

Rai (1974) investigated the relationship of anxiety with academic achievement on a large sample of 1,000 Biology students. The investigator employed Sinha's Anxiety Scale as a measure of anxiety and the examinations marks as achievement measure. The results suggested a negative relationship between anxiety and academic achievement. High levels of anxiety were found affecting the subjects' attainment detrimentally while the low levels of anxiety
went with high achievement.

Rai also investigated the magnitude of association between need achievement and academic achievement. For measuring need achievement, the investigator applied Mehta's need achievement test.

The results revealed a highly significant and positive relationship between need achievement and scholastic performance.

Ruhland, Gold and Feld (1978) also studied the relationship between achievement motivation and scholastic performance. The sample consisted of 154 children of primary level. The results showed a positive and significant relationship between achievement motivation and scholastic performance.

Vora (1978) also carried out an investigation on the relationship between anxiety and academic achievement. The sample consisted of 200 students of class VIII. Patel's Reading Ability test and the Test Anxiety Scale were used for obtaining relevant data. The findings revealed that anxiety was negatively correlated with reading achievement to a high statistical significance.

Reddy (1978) conducted a longitudinal study of relationship between academic adjustment and scholastic performance.
A group of 750 VIII grade students was randomly selected and followed up to class X.

The results of statistical comparison between school achievement of the subjects along three grades, VIII, IX and X, and academic adjustment, measured through an adapted form of Rao's Academic Adjustment Inventory, yielded highly significant relationship between the two variables. High academic adjustment was, thus, found associated with high achievement and low academic adjustment with low achievement.

Maqsud (1980) studied extraversion, neuroticism and intelligence in relation to academic achievement. The results showed a significantly positive relationship between intellectual ability and academic achievement. A significant negative relationship was found between extraversion and academic achievement. Neuroticism did not discriminate the subjects on achievement.

Traub (1984) studied shyness in relation to depression, anxiety and academic performance among 187 undergraduates. He found shyness positively correlated with depression and anxiety but his findings also revealed that the shy people tended to have higher achievement mean scores than the non-shy subjects.

A perusal of the above studies shows quite understandably that academic achievement is associated with certain types of
personality characteristics.

There seems to be a near consensus among the investigators about academic adjustment, achievement motivation and low level of anxiety as going with high scholastic performance and neuroticism and high level of anxiety as accompanying low academic attainment. On extraversion, there are sharp differences among the studies in the field, some showing positive and some negative relationship of this personality type with academic achievement. However, Entwistle and Welsh study brings out a finer difference; extroversion with high ability group is negatively correlated with academic performance while with the low ability group it is positively correlated with school attainment.

Though the studies discussed so far are purely based on the concept of high and low achievement in relation to personality factors, they certainly suggest the possible personal and temperamental domains to be explored for the personal concomitants of over and under achievement.

Studies on Personality Factors in Relation to Academic Success and Failure, Termed as Over and Under Achievement.

Some attempts have also been made to tackle with the personality factors operating on over and under achievement but much of the work has suffered from the definitive and
operational misconceptions of the phenomenon and led to confounding and at best, non-conclusive results.

A brief mention of such studies may be presented here to provide a historical background to the problem in hand.

Shaw and McCuen (1960) in their study entitled 'The onset of underachievement in brighter children' on 116 high school students identified under achievers as those whose grade point average fell below the class mean and over achievers as those whose GPA stood above the class mean. The investigators arrived at the conclusion that the onset of underachievement for boys was earlier than for the girls as it was found that identification of underachieving boys among the brighter children was possible as early as by the third grade and underachieving girls as late as the sixth grade.

Curry (1961) attempted to study "certain characteristics of under-achievers and over-achievers" identified simply by working out discrepancies between T-scores on the California Achievement Test and T-scores for the California Test of Mental Maturity. Subjects whose achievement scores were higher than intelligence scores were termed as 'over achievers' and those whose achievement scores were lower than intelligence scores were dubbed as 'under achievers'.

The results showed that the upper socio-economic group contributed underachievers 'three times more' than the number
contributed by the lower socio-economic group. Besides, the ratio between male and female underachievers was found to be 2:1.

Parsley, Powel and Oconmer (1964) carried on a study almost on the same lines to find out sex differences with reference to over and under achievement. The investigators constituted five IQ groups for boys and girls separately. Scores on reading comprehension and reading vocabulary obtained through California Achievement Test (CAT) served as the achievement measures. Subjects scoring above the group achievement means were classified as over achievers, those closely around the mean as achievers and those falling below the group mean as underachievers. The results yielded that the girls in all the groups proved 'superior' to the boys in achievement.

Jarvis (1965) also studied the sex differences in achievement by classifying a sample of 347 girls and 366 boys of the sixth grade into three IQ groups, bright (115 + IQ), average (95 - 115) and dull (94 and below). Here, again, over and under achievements were determined in terms of discrepancies from the group achievement mean scores. His results very much confirmed the findings of Parsley in that girls were found to be superior to the boys in school achievement at the same age level and within the intelligence group.
Hummel and Sprinthall (1965) also studied what they termed over under achievement in relation to interest, attitudes and values. The sample was divided into three groups termed as 'under achievers', 'par achievers' and 'superior achievers', identified on the basis of difference from the group achievement mean. Significant differences were found across the groups on 'the adaptive aspects of ego functioning and maturity'. This study also suffers from the conceptual error. Intelligence, instead of serving as a standard for the determination of over under achievement, was neutralised by being held constant.

Jayagopal (1974) carried out a study on low and high achievers termed as "the under and high achievers" in relation to personality. What he actually did was to study the personality profiles of an arbitrarily demarkated pair of extreme groups on the continuum of academic achievement. No significant relationship was found between academic achievement and eleven out of fourteen personality factors on Cattell's Jr-Sr HSPQ in the case of high achievers. Only three factors A, E and I were found associated with high achievement. In the case of low achievers called "the under achievers" only factor J and H were found significantly related with scholastic achievement and the rest twelve showed no association.

In the light of this finding the high achievers were
characterised as reserved, humble and tough-minded and the low achievers as zestful and prone to group activity.

Tandon (1978) studied anxiety levels among male and female 'under achievers'. His subjects were 400 High School failures. Sinha's anxiety scale served as the measure of anxiety and the school examination marks as the measure of academic achievement. The results showed that both the groups of male and female failures termed 'under achievers' were prone to high level of anxiety and there was no significant difference between the two groups.

Thus in the decade prior to 1963 and even after, there had been a proliferation of research where the terms over and under achievement were used for high and low achievement.

As such, these studies, although generating valuable data on the relationship of personality and achievement were, strictly speaking, not studying the phenomenon of over and under achievement. As may be seen from the above review, intelligence, which should have served as the predictor of achievement for the identification of over and under achievers, was either neutralised by being held constant or was completely ignored.
Studies on Personality Factors in Relation to Over and Under Achievement Based on Composite Achievement Scores.

There are, however, some research studies which have been conducted with a clearer understanding of the concept of over and under achievement and the non-intellective personal domain of over and under achievers has been explored.

Rao (1963) conducted a study on the relationship between student performance and adjustment among university students. The investigator used regression equation to predict students' scholastic achievement through intelligence. Discrepancies were worked out between the predicted and actual achievement scores. Those showing positive discrepancy were designated as over achievers and those showing negative discrepancy as under achievers.

The study revealed significant difference on the measure of adjustment between the over and under achievers. The over achievers were found to be far more adjusted than the under achievers.

Taylor (1964) attempted to study the relationship between personality traits and discrepant achievement. The discrepant achievement referred to achievement over and under the levels anticipated on the basis of intelligence.

The results revealed that over achievers were more likely to be characterised by (1) positive self value, self-
confidence, self acceptance, high self esteem; (2) acceptance of authority, conformity to expectation of teachers and parents; (3) positive interpersonal relationships, (4) higher power of self decision and leadership; (5) good study habits and high achievement motivation, interest in academic values; (6) a realistic goal orientation; and better control over anxiety.

The under achievers, on the other hand, were found more likely to be characterised by (1) high anxiety, (2) negative self concepts, (3) disrespect towards authority, (4) poor adjustment, (5) excessive group dependence, (6) interest in pleasure seeking rather than academic activities, (7) unrealistic goal orientation or no goals.

Gawronski (1965) carried out an investigation on differences between over achieving, normal achieving and under achieving high school students numbering 475.

Subjects whose school achievement in English, Science, Mathematics and Social Sciences exceeded the level expected on the basis of IQs, were designated as over achievers; those whose performance was around the expected level were termed as normal achievers; and those whose performance in these school subjects, taken together, fell below the expected levels were dubbed as under achievers.

The comparison of these three groups revealed that over
achievers had better work habits and greater interest in school work. They were also more persistent, more responsible, and more conscientious than the normal and under achievers.

Under achievers on the other hand, were more impulsive, more 'uninhibited', more pleasure seeking and more interested in immediate results or rewards. They were also found to be less adjusted, less cooperative, less dependable, less sociable, less disciplined and less diligent but more selfish.

Morrison (1969) studied underachievement in relation to passive aggression among the pre-adolescent boys. The sample consisted of 164 boys from a public school. The California Test of Mental Maturity was used as predictor and the grade point average as the measure of academic achievement. Scores on passive aggression were obtained from the ratings of class teachers. The sample was divided into three categories -- over achievers, achievers and under achievers -- on the basis of discrepancies between the actual achievement scores and the scores predicted through intelligence on the basis of regression equation. Comparisons were made between the achievers and under achievers and the over achievers were not included in the study. The results showed that the under achievers possessed significantly higher passive aggression than the achievers.
Vanarasi (1970) investigated the relationship between study habits and normal and under achievement. 77 pairs of normal and under achievers were compared on the measure of study habits, scored on Sinha's personality test. Marks on annual examination of IX and X classes were taken as measures of academic achievement. The study revealed the superiority of the over achievers over the under achievers on study habits.

Bhaduri (1971) carried out a comparative study on certain psychological factors of the over and under achievers. The sample was drawn from the higher secondary level and total marks of the annual examination served as achievement measures. The investigator found significant differences between the over and under achievers in different personality dimensions. The over achievers were found to be less neurotic and less anxious than the under achievers. They also showed superiority over the under achievers in study habits, attitude towards school and socio-economic background.

Dhaliwal (1971) attempted a study on certain personality traits in relation to academic achievement operationally defined as over and under achievement. The study was made with methodological precision and with a fairly large sample numbering 887. The results revealed that the over achievers were significantly higher on reservedness, verbal ability, emotional stability, obedience, sobriety and personal and
social adjustment, than the under achievers whereas outgoingness, low verbal ability, emotional instability, assertiveness, happy go lucky temperament, poor personal and social adjustment and insecurity, went with under achievement.

Need achievement and anxiety showed a curvilinear relationship with over and under achievement. The over and under achievers thus showed higher need achievement and greater anxiety than the normal achievers.

Sharma (1972) studied over and under achievement in relation to adjustment in school, home, social and religious and miscellaneous areas. The sample consisted of 424 male students from VIII standard. Over and under achievement was determined on the basis of prediction through Mehta's Verbal Intelligence Test. The results clearly brought out the superiority of over achievers in all the aspects of adjustment over the under achievers.

Menon (1973) studied over and under achievement within high ability group in relation to certain personality characteristics. His study revealed that the over achievers scored significantly higher than the under achievers on the measures of academic interest, endurance and persistence.

Passi and Lalithamma (1973) studied over and under achievement in relation to self concept and creativity. 117 tenth grade subjects from Barodah High Schools were categorised
as over achievers, normal achievers, and under achievers on the basis of prediction through Patel Intelligence Test. Creativity was measured on Passi Test of Creativity and self concept by means of the Personality Word List. On self concept there was no significant difference between the groups. On creativity the groups differed significantly, the overachievers being more creative than either of the two groups, the normal and under achievers.

Maria (1974) studied the case of a 15 year old boy with poor scholastic achievement despite good intellectual capacities.

The investigator discovered that the boy was an under achiever as well as aggressive in his behaviour. Further explorations yielded the findings that his aggressive behaviour, which emanated from certain socio-psychological factors, was responsible for his lack of concentration and persistence in studies rendering him unable to achieve upto the level expected on the basis of his intelligence.

Being based on a single subject, however, the study does not allow generalisation of results.

Agrawal (1976) carried out a detailed study on certain personality factors in relation to academic under achievement. The investigator found significant differences between the over and under achievers on Cattell's HSPQ. The results showed that the under achievers had lower mean scores than over
achievers on C, G, H, Q_2 and Q_3 factors, namely, Emotional stability, Super ego strength, Adventuresomeness, Self sufficiency and self control. On the other hand, under achievers scored higher on I, J and Q_4, namely, Tender mindedness, Circumspect individualism and Tenseness.

On factors A, B, D, E, F and O, i.e., Warm heartedness, Intelligence, Excitability, Assertiveness, and Enthusiasm, there was no significant difference between the two groups.

Stockhard and Wood (1984) investigated sex differences in academic under achievement among 287 male and 283 female graduate students. The investigator used California Test of Mental Maturity - Long Form, to predict the subjects' achievement in English and Mathematics and total grade averages, and identified the under achievers with methodological precision.

The results showed that the male subjects were more likely than females to have their actual grades in Mathematics as well as in total grade averages lower than their predicted scores. Thus underachievement proved more to be a male problem than the problem of the female counterparts.

The studies on discrepant achievement discussed so far, though generally free from conceptual errors, worked out over and under achievement from the total achievement scores,
which to the present investigator is rather a distorted representation of an individual's position in specific areas of knowledge.

Studies on Personality Factors in Relation to Over and Under Achievement in specific Knowledge Areas.

It would be more realistic a representation if the individuals' achievement in individual school subjects is taken as the basis for deriving over and under achievement and then its relationship is seen with other variables, as a few investigators have attempted to do in the following studies.

One such study was that made by Ridding in 1966. He carried out an investigation on certain personality measures associated with over and under achievement in English and Arithmetic. The purpose of the study was to discover the personality characteristics that differentiated over achievers from under achievers in each of the two subjects. Cattell's H.S.P.Q., Forms A and B and Eysenck's M.P.I. were employed to assess the personality traits of the sample consisting of 600 boys and girls, aged 12 plus, from some Manchester schools.

The sample was classified as over achievers, under achievers, and average achievers on the basis of prediction
through verbal intelligence. Separate groups were constituted for boys and girls on each of the two subjects—English and Arithmetic.

The study yielded certain important findings about the personality traits characterising the over and under achieving boys and girls in English as well as Arithmetic.

1) The over achieving girls in English showed more neuroticism than the over achieving boys.

2) The under achieving girls in Arithmetic were more extroverted than the under achieving boys.

3) The over achieving girls in English were more surgent than the average achievers.

4) The over achieving boys in Arithmetic were found to be more surgent than the average and under achievers.

5) The over achieving girls in Arithmetic possessed more conscientiousness than the under achieving girls.

6) Extroversion was found associated with over achievement and introversion with under achievement.

7) No significant relationship was found between over-under achievement and emotional stability as well as anxiety.

Saxena (1972) attempted an investigation into the adjustment problems of over and under achievers. The sample consisted of XI class students of 15 years age group selected
randomly. The subjects came from Science, Commerce, and Arts streams of higher secondary schools at Allahabad.

The over and normal and under achievement were identified through prediction by intelligence on the basis of regression equation. Subjects showing positive discrepancy from the predicted scores were over achievers, those with negative discrepancy under achievers, and those closely around the predicted scores were designated as normal achievers. Mooney's Problem Check List served as the measure of adjustment problems.

The results clearly discriminated between the over and under achieving groups on adjustment problems, the under achievers in all the streams showing significantly greater number of adjustment problems than the over achievers.

Abraham (1974) conducted a study on certain noncognitive factors in relation to over under achievement in English at the secondary school level. The results showed that the over achievers in English were superior to under achievers on both social and personal adjustment measures. They also showed superiority in socio-economic status over the under achievers. Besides, the over achievers scored significantly higher on attitude towards English than the under achievers.
Studies on Remedial Measures of Under Achievement

Since the problem of under achievement has assumed quite menacing dimensions with its educational and psychological implications, recent studies are now showing trends to explore remedial measures to help under achievers. Though not directly relevant to the present investigation, a brief mention of some such studies would not be out of place here.

Writh (1977) conducted a study on under achievers in reading with the objective to investigate 'the effects of a remedial reading and counselling programme on the under achieving students' perception of self-responsibility for academic performance'.

The sample consisted of 190 under achievers in reading from grades 3rd to 6th. For each grade the subjects were divided into two groups of equal size, one being 'the treated group' the other 'control group.' The treated groups were given supplementary programmes for remedial reading and effective counselling programmes using the Adlerian model.

The Intellectual Achievement Responsibility Scale (IARS) was administered for the Pre- and Post-test comparisons in each grade. The results showed that the treated groups achieved statistically significant gains in 'the perceived
self-responsibility for academic performance*, while the control groups exhibited no significant gain or difference between the pre-test and post-test scores.

Garler, Kinney and Anderson (1985) studied the effects of counselling on classroom performance. The investigators assessed the effects of Lazarus' 'multimodal' individual and group treatment on 41 underachievers from third and fourth grades. An additional control group of 24 underachievers was employed for comparison with the treated group. The pre-test and post-test scores for both the groups on a self rating scale and teacher's ratings served as the data for the investigation.

The results showed that the experimental group, as compared with the control group, was positively affected by the counselling interventions both in the gains of grades and in general classroom behaviour.

Limbrick et al (1985) investigated the effect of cross-age peer tutoring programme in reading on 3 under achieving student tutors and 3 under achieving student tutees. The tutors were 10-11 years old and the tutees 6-8 years old. Subjects were selected on the basis of their scores on the Metropolitan Achievement Tests and the Newzealand Progressive Achievement Tests.

Neale Analysis of Reading Ability and MAT were administered
to the subjects before the study, during the study and after the study.

The results showed marked improvement in oral reading and comprehension, on classroom exercises and on the standardised reading tests for both the under achieving peer tutors and tutees.


The reciprocal peer tutoring tasks, instruction, observation and reinforcement, were assigned to the treatment group to be performed through four roles, 'Coach', 'Score keeper', 'Referee' and 'Manager'. This treatment through the 'Reciprocal Peer Tutoring Group Contingencies' along with follow up phases continued for twelve weeks.

The results indicated a sharp increase in arithmetic performance of the under achievers. Besides, the sociometric pre- and post-intervention data revealed significant gain in peer affiliations among the members of the treated group.

A review of the studies on over and under achievement reveals quite evidently that the field has yet not been adequately explored. There is little agreement among the investigators on the personality factors characterising
over and under achievement. However, there seems to be a consensus on personal and social adjustment and emotional stability along with good study habits as going with over achievement, and poor study habits, lack of personal and social adjustment, and emotional instability as going with under achievement.

Certain studies, as discussed in this chapter, have individually reported the superiority of over achievers on endurance, persistence, self-sufficiency and self-control, over their counterparts, the under achievers.

On extroversion, need achievement, obedience, adventuresomeness, circumspect individualism, and anxiety, the findings are quite conflicting.

Studies on over- and under-achievement in specific school subjects are few and far between, and no definite conclusions can be based on their findings except that over achievers in different subjects are more adjusted, more conscientious and more enthusiastic than the under achievers.

No attention has been paid to the possible intra-individual differences in over and under achievement in different school subjects, nor has the possible differential association of personality characteristics with over and under achievement in different school subjects been explored. Sex differences too have only rarely been touched upon.
In view of these gaps in knowledge in the field of over and under achievement, particularly pertaining to different school subjects, and following the indications gleaned from the previous work regarding differential relationship of personality characteristics with over and under achievement in different school subjects, the present research work was undertaken.

The hypotheses derived from previous researches, as reviewed in this chapter, have been stated at the end of Chapter I and the relevant methodology is discussed in Chapter III.