

Research in Correlates of Achievement

A TREND REPORT

M. S. PADMA

INTRODUCTION

The world is becoming more and more competitive. Quality of performance has become the key factor for personal progress. Parents desire that their children climb the ladder of performance to as high a level as possible. This desire for a high level of achievement puts a lot of pressure on students, teachers, schools, and, in general, the educational system itself. In fact, it appears as if the whole system of education revolves round the academic achievement of students, though various other outcomes are also expected from the system. Thus a lot of time and effort of the schools are used for helping students to achieve better in their scholastic endeavours.

The importance of scholastic or academic achievement has raised several important questions for educational researchers. What factors promote achievement in students? How far do the different factors contribute towards academic achievement? Many factors have been hypothesized and researched upon. Researchers have come out with varied results, at times complementing each other, but at times contradicting each other. A complete and comprehensive picture of academic achievement still seems to elude the researchers. The search, therefore, continues; educational researchers all over the world are still seeking a breakthrough in elucidating this phenomenon. In view of this it will be very useful to undertake a synoptic view of the researches conducted in the field so far as this will indicate the areas on which educational researchers could concentrate most profitably.

Attempts have been made over the past years to clas-

sify the studies in this area. The credit of undertaking a pioneering work in this direction goes to R.H. Dave (1968). In the third *Indian Yearbook of Education* he has reviewed 17 researches in the field which were carried out at M.Ed. and Ph.D. levels. Though the compilation was not exhaustive, it did indicate that the studies were undertaken to investigate into the relationship between achievement and variables like socio-economic status, sex, intelligence and so on.

A systematic effort was also made in the three educational research surveys edited by Buch (1974; 1979; 1986). These have compiled information on Ph.D. studies conducted at various Indian universities, as well as research projects sponsored or undertaken by different agencies. In the first survey (1974), the trend report in the area of correlates of achievement was developed by P.N. Dave. The report is based on 44 studies, 33 of which were Ph.D. studies and 11 projects. The studies have been classified under different sub-headings, namely, Correlates in General, Personality Correlates, Socio-economic Status, Backwardness and Failure, Over-and Under-achievement, and Miscellaneous. Summing up the trend report, the author has highlighted the fact that experimentation on real problems in the area was what was urgently required and not sporadic studies on issues of mainly academic interest.

The trend report in the second survey (1979) was developed by P.N. Dave and C.L. Anand. This was based on the studies reported in the first survey and an additional 38 studies, 30 being doctoral studies and eight research projects. In this trend report, the studies have been classified under the categories—Correlates in General, Socio-economic Status, Personality Corre-

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lates, Poor Curriculum Organization, Over- and Under-achievement, and Miscellaneous Correlates of Achievement. This classification has got the category, Poor Curriculum Organization, in place of Backwardness and Failure which appeared in the classification in the first survey. This in a way suggests changes in the trend of selection of variables by researchers.

The trend report in the area which was developed by C.L. Anand and M.S. Padma in the third survey (1986) took into consideration an additional 65 studies, out of which 50 are doctoral studies and the rest projects. The authors of the trend report have classified the studies under eight categories, namely, Personality Correlates, Creativity and Achievement, Affective Correlates, Socio-economic Status and Achievement, Over and Under-achievers, Achievement of SC/ST Students, Institutional Characteristics and Achievement, and Miscellaneous. This classification, when compared with the earlier two classifications does not have categories of Correlates in General, Backwardness and Failure, and Poor Curriculum Organization. But three other categories have been identified. These categories are Creativity and Achievement, Institutional Characteristics and Achievement, and Achievement of SC/ST Students. This suggests that educational researchers, in order to understand various pertinent questions in relation to scholastic achievement, started hypothesizing over certain variables which were not much considered earlier.

While keeping in mind the studies already referred to in the earlier three surveys, the present trend report has specifically concentrated on 96 new studies. They include 88 doctoral studies conducted at various Indian universities and eight projects conducted or sponsored by different agencies of educational research. The classification of the studies in this report has been considered under three main headings:

A. Variable-wise analysis of the studies

- (i) achievement and inherent variables of students
- (ii) achievement and teaching variables
- (iii) achievement and sociological variables
- (iv) achievement and other variables

B. Educational level-wise analysis of the studies

C. Subject-wise analysis of the studies

A brief picture of the different researches from among the 96 falling under each head of classification is given further below.

A. VARIABLE-WISE ANALYSIS OF THE STUDIES

(i) Achievement and Inherent Variables of the Students

Studies which have considered variables like intelligence, anxiety, values, interest, aptitude, etc., as correlates of achievement are presented under this category.

The importance of intelligence as a contributing factor towards achievement is time and again researched upon. Among the studies under consideration, those which have considered intelligence as a variable contributing towards achievement are Agrawal (1973), Das (1975), Girija (1980), Shanmugasundaram (1983), Singh (1983), Deshpande (1984), Patil (1984), Rajput (1984), Singh (1984), Sween (1984), Chhikara (1985), Mitra (1985), Das (1986), Deshpande (1986), Kumar (1986), Mehna (1986), Mehrotra (1986), Misra (1986), and Singh (1986). All the studies have shown that intelligence, in general, is a factor contributing towards achievement. Dixit (1985) made a comparative study of the academic achievement and intelligence of adolescent boys and girls. Some studies have considered specific aspects of intelligence, Chhikara (1985) arrived at a positive relationship between reasoning abilities and achievement of concepts. The study by Tiwari (1986) suggested a similar conclusion. In the study of Singh (1983) the mental abilities, namely, numerical ability, reasoning ability, memory and symbolic representation indicated a positive influence on achievement. A factorial and validation study of the abilities involved in learning chemistry at the ninth grade stage was carried out by Rajrani (1986). It was revealed that only seven of Guilford's structure of intellect abilities predicted achievement.

Researches have been carried out on certain personality factors of students as correlates of achievement. Personality characteristics are measured using personality questionnaires or inventories. Gupta (1983), Khanam (1983), Gopalacharyulu (1984), Lall (1984), Jahan (1985), Mitra (1985), and Sontakey (1986) happen to be such studies. All of them worked on school students as the sample except the study of Gopalacharyulu (1984) which involved student-teachers in teacher training institutes as its sample. Pathni (1985) investigated the effect of identity versus role-confusion, self-concept and need (self-actualization) on the academic achievement, actual as well as perceived, of students belonging to intermediate colleges.

The studies of Das (1975), Shanmugasundaram (1983), Deshpande (1984), and Mehrotra (1986) considered anxiety as a variable. Though anxiety measurement could not significantly differentiate between students who passed and those who failed in general science in the study by Das (1975), a negative relationship between anxiety and achievement was indicated in Shanmugasundaram (1983) and Mehrotra (1986). The study by Deshpande (1984) explained some amount of variance, on account of anxiety, between the high and low achieving schools.

A lone study by Trivedi (1987) has attempted to investigate the relationship between the feeling of security-insecurity and achievement. The sample consisted of girls studying in intermediate colleges in Lucknow. The results indicated that there was no significant relationship between feeling of security-insecurity and academic achievement.

Shanmugasundaram (1983), Singha (1983), Sween (1984) and Pathni (1985) considered self-concept as a factor related to academic achievement. Singha (1983) found a positive and significant relationship between self-concept and achievement. Using the Deo Personality Word List, Sween (1984) found that students with high self-concept achieved significantly higher than those with low self-concept. Similarly Pathni (1985) arrived at the conclusion that self-concept is a significant predictor of academic achievement, both actual and perceived. In this study, the tool used was the Self-concept Scale, standardized by Bisht and Pathni. But the study of Shanmugasundaram (1983) indicated that self-concept, as measured on Mohsin's Self-concept Scale, did not differentiate between high and low achievers. Ego-involvement and intelligence made a remarkable contribution to the success of students at the graduation examination in the study of Kumar (1986).

Studies which have investigated achievement motivation as a factor in relation to academic achievement, in general, caution researchers to be careful while drawing inferences. Studies by Shanmugasundaram (1983), Deshpande (1984) and Sween (1984) have indicated a positive relation between the two variables. But Rajput (1984) and Sontakey (1986) did not indicate any such relation. Mitra (1985) throws a better light on the issue. The study found that achievement motivation is positively and significantly correlated with academic achievement, but this result is not arrived at when intelligence is partialled out. According to Sharma (1981), poor academic motivation, poor linguistic ability, poor

planning of study work, poor adjustment, and emotional insecurity contributed to under-achievement of rural girls in secondary schools of Haryana. A factor-analytical study by Singh (1983) tried to find out the motivational correlates of under and over achievement. Shardaani (1986) attempted to study the effect of motives, incentives and expectancy of goal attainment upon the performance of students in the age range, 14-16.

Studies by Agrawal (1973), Patil (1984), Mehna (1986) and Singh (1986) investigated whether interest of the students had any contribution towards their achievement. Dwivedi (1983) found that level of aspiration as a factor did not influence performance of students on a linear programme in biology. In a study by Das (1986) which was conducted in the schools of Assam State, educational aspiration was found to be a predictor of achievement with a contribution of 8.58 per cent of variance.

Aptitude has been identified as an important correlate towards academic success in certain specific fields. Medical aptitude is indicated as a contributing factor for proficiency in medical examinations in the study by Agrawal (1973). Similarly scientific aptitude is indicated as a significant predictor of academic achievement in science in the study by Mehna (1986).

As regards the variable 'adjustment', Sharma (1982) studied the differences that existed between backward and non-backward students in different areas of adjustment and it was found that they differed significantly on overall adjustment scores. Shanmugasundaram (1983), while studying high and low achievers came to the conclusion that the latter had more adjustment problems than the former. The study by Mehrotra (1986) also showed a positive relationship between level of adjustment and academic achievement. On the other hand, Rajput (1985) showed that academic adjustment was not meaningfully related to academic achievement.

Some researchers have considered study habits and attitudes as correlates of achievement. Tiwari (1982) and Shanmugasundaram (1983) indicated a positive relationship between study habits and achievement. Singh (1986) found that high achievers scored high in study attitudes while low achievers scored low. Deshpande (1984) showed no difference in the study habits of students from high-achieving and low achieving schools. Singh (1984) made a survey of the study habits of high, middle and low achieving adolescents in relation to their sex, intelligence and socio-economic status. The study found that the study habits of boys

and girls differed significantly at different levels of academic achievement. The study by Patil (1984) was conducted on postgraduate pupil-teachers of the colleges of education affiliated to Nagpur University. The study showed that the coefficient of correlation between the attitude of pupil-teachers as measured on Ahluwalia Teacher Attitude Inventory and their achievement was 0.16, which was found to be positive and significant.

(ii) Achievement and Teaching Variables

Some studies have concentrated their attention on the effect of the processes that occur in teaching-learning activity on the achievement of students.

In an experimental work, Nagpal (1983) compared the effects of the Piagetian method of teaching and objective-centred teaching based on the rationale of the Advanced Curriculum Model of Cognitive Learning on the development of listening comprehension, reading comprehension in terms of knowledge, understanding, application and total scores, as well as on achievement in Hindi of primary students. Both the methods of teaching were found to be superior to the traditional method, but the objective-centred teaching method showed superiority over the Piagetian method. The work of Bhalwankar (1985) involved a 2×3 factorial design to study the effects of expository and guided discovery method of teaching mathematics on the achievement of students who were grouped under three levels—high middle and low—of intelligence. Pre-achievement was used as a covariate. The effectiveness of the two methods of teaching seems to differ according to the different instructional objectives as well as the level of intelligence of the students. The study of Kumari (1985) showed no difference with regard to students' achievement when taught by either the inductive or deductive strategy of instruction. But the combined strategy was more effective than inductive and deductive strategies taken separately.

In an experimental study by Kamalanabhan (1987), the experimental group, which was subjected to a multifaceted behavioural training programme consisting of relaxation and 'assertive and study skill training', showed a significant increase in achievement when compared with the control group.

Yadav (1987) attempted to find the relationship between indirectness in teacher behaviour as measured by the Flanders Interaction Analysis Category System with pupil achievement. The study revealed that indirect teacher behaviour as shown by I/D and i/d ratios was

not found related with students' achievement in biology at high-school level.

Srivastava and Ramaswamy (1986) studied the influence of bilingual education (having a language other than one's mother-tongue as medium of instruction) on academic achievement. In another study, Raveendranathan (1983) tried to compare the achievement in science between students studying in two different media of instruction, namely, English and Malayalam. Sharma (1986), through an experimental work, studied the performance of students, who were categorized at three levels of creativity, as a function of instructional media and learning tasks. Barua (1981) found that, if learning materials were so presented as to appeal both to intellectual and non-intellectual aspects of the students, then it would lead to a better learning and achievement.

Programmed learning as a method of instruction has drawn the attention of Brahmabhatt (1983), Khanam (1983), Sween (1984), Chitkara (1985) and Hooda (1982). The study by Brahmabhatt (1983) developed a language programme and found it to produce better achievement in students when compared with the language material of the textbook. The effect of three instructional designs, namely, programmed instruction, structured communication, and teacher-directed structured instruction, on the performance of students in biology was studied by Khanam (1983). The mixed programme was found less effective than the teacher-directed structured lesson, while structured communication differed from neither of the other two. In the study conducted by Sween (1984) at Chandigarh, the effectiveness of two levels of instructional design, namely, programmed instruction and adjunct programming, were studied with reference to the academic achievement of high school students. The results showed that programmed instruction was more effective than adjunct programming. The experimental work of Chitkara (1985) attempted to study the effectiveness of different strategies of teaching on achievement in mathematics. The three strategies of teaching tried out were lecture—discussion, inductive-drill, and auto-instruction—group discussion. All the three strategies were found to be equally effective in terms of achievement in mathematics, disregarding levels of intelligence, sex, and personality type of the students. In the experimental work conducted by Hooda (1983) it was shown that students taught through the mastery learning technique showed higher gains in mathematics than those taught by the conventional methods.

Micro-teaching as a process variable and teaching competence of the teachers exposed to this variable as the product were considered in the study of Kalyanpurkar (1986). Furthering it, the study found that the microteaching treatment had a positive, significant impact on pupils' attainment as well as on pupils' retention on the attainment tests when the respective means were adjusted separately for the three covariates, namely, DIQ, class VI scores, and pre-student liking scores.

Naik (1984) compared the achievement of two groups of pupils, one group taught by teachers trained in micro-teaching and the other taught by those trained through the conventional approach.

✓(iii) Achievement and Sociological Variables

It has been accepted that the environment—both in and outside the school—in which the child grows has a great influence on the academic achievement of the student. Researchers have attempted to find out the role of several of these variables.

Among them, socio-economic status is the most commonly studied variable. Shukla (1984), Mehrotra (1986), Misra (1986), and Singh (1986) showed a positive relationship between SES and academic achievement of the students. In the study conducted at the CIIL, Srivastava and Ramaswamy (1986) found that the effect of SES on achievement in mathematics and social studies was significant. Dwivedi (1983) found that SES significantly affected achievement in biology of higher secondary pre-medical students when taught through a linear programme. In the study by Sarah (1983) it was found that the coefficient of correlation between achievement and SES was positive and significant when the effect of pupils' attitude towards science and towards science education were partialled out. Adolescents of high SES possessed high scholastic achievement according to Sharma (1984). In Sontakey (1986), the high achievers had a high socio-economic status and they hailed from highly educated families. Trivedi (1987) showed that students belonging to upper socio-economic status groups showed better academic achievement than students belonging to lower socio-economic status groups. With reference to achievement in mathematics, Rajput (1984) established that socio-economic status of students affected their achievement. Though the high SES and average SES groups did not differ, the high SES and low SES groups did differ significantly on achievement in mathematics.

In the study by Das (1975) which was conducted in

West Bengal, the socio-economic status was one of the primary factors responsible for low achievement in general science. Studying the relationship between certain psycho-sociological factors and achievement of student-teachers in teacher training institutes of Andhra Pradesh, Gopalacharyulu (1984) showed that socio-economic status and caste influenced the total achievement as well as achievement in theory and practicals, taken separately, of the student-teachers.

✓Pandey (1981) and Puri (1984) studied the influence of environment as a factor to promote academic achievement among students. The former concluded that an urban atmosphere was more conducive to better achievement than a rural environment. The latter brought out that the effect of environmental facility on both general academic achievement and achievement in English language was significant.

The environment provided to the student by his home has drawn the attention of Grover (1979), Gaur (1982), Sarkar (1983), Lall (1984), Jagannadhan (1985), Maitra (1985), Paul (1986) and Trivedi (1987). A significant difference between high achievers and low achievers on the home variables—namely, educational environment, income, spatial environment, social background, provision of facilities, and parent-child relationship—was shown in Sarkar (1983). In the study by Maitra (1985) home environment was found to be an important variable which could cause underachievement among the gifted. Studying the effects of home environment on the cognitive styles of students, Paul (1986) concluded that the factors of home environment, like recognition of the child's achievement, parental aspiration, forbearance for the child's wishes, parental affection, encouragement for initiative and freedom, etc., had positive and significant correlation with each of the four modes of cognitive styles studied. Grover (1979) indicated some influence of aspirations of father and mother over children's academic achievement. Gaur (1982) showed that birth order did not affect the speed of reading, comprehension and vocabulary of students. Trivedi (1987) found that parental attitude was significantly related to academic achievement. Lall (1984) showed that protective attitudes of parents was positively related to the academic success of boys. Jagannadhan's (1985) study indicated a significant effect of home environment on academic achievement.

The environment provided at the learning place of students as a variable has been studied by Deshpande (1984), Doctor (1984) and Upadhyaya (1982). No spe-

cific trend of organizational climate was found to differentiate between the high and low achieving schools, according to Deshpande (1984). The study by Doctor (1984) indicated a relationship between classroom climate and academic achievement. Upadhyaya (1982) conducted the study on the tribal population of Bastar District in Madhya Pradesh. It was found that each of the three aspects of classroom environment—interpersonal relationships, goal orientation, and system maintenance and change—was significantly related to academic achievement.

Studies by Girija (1980), Mishra (1983), Malik (1984), Kamila (1985), Pandey Kalpalata (1985), and Verma (1985) have concentrated on samples of students who may be considered as slightly disadvantaged when compared to others. Kamila (1985) brought out a comparative picture between the achievement of students belonging to Harijan and Tribal Welfare Department high schools and those belonging to Education Department high schools in Orissa. The picture was in favour of the latter. In a study conducted in Uttar Pradesh by Verma (1985), the mean achievement of scheduled caste students was found to be significantly lower than that of tribal students and of students belonging to other castes. But, the study did not show any difference between the achievement of students belonging to scheduled tribes and those belonging to other castes. Patel (1987) attempted to compare the cognitive and personality differentials of the disadvantaged and advantaged secondary school children from Orissa. The study used a sample with an equal number of scheduled caste, scheduled tribe, and advantaged students. The findings revealed that the three groups differed significantly in their academic achievement. Mishra (1983) studied the effect of socio-economic background and culture on academic achievement of children. The sample included three sub-cultural groups, namely, the urban, the rural and the tribal. Each of these groups was further divided as socio-economically advantaged and socio-economically disadvantaged. The study showed that the advantaged children secured higher educational achievement scores than the disadvantaged children both in the urban and the rural sub-cultures. Among the disadvantaged children the tribals secured higher educational achievement scores than those of their urban and rural counterparts. Pandey Kalpalata (1985) showed that low deprived students performed better than high deprived students in certain subjects of study, namely, social studies, science and Hindi. Kathuria (1982), investigating a sample drawn from

urban higher secondary schools of Bhilai and Raipur, found the relationship between scholastic achievement and global prolonged deprivation to be not significant. Girija (1980) explored predictor factors, both intellectual and non-intellectual, which contributed to the cumulative grade point average of advantaged and disadvantaged students of an agricultural university. Malik (1984) showed that first-generation learners had significantly lower academic achievement than the non-first generation learners.

(iv) Achievement and Other Variables

Apart from the variables considered earlier, researchers have taken note of other variables. Such studies are briefly presented below.

Sarma (1973), in a study conducted at Jorhat town and its surrounding suburban areas in Assam, tried to find out the effect of admission at early age on the achievement of students. The conclusions show that admission at an early age affected children much in their academic progress. Early age-group learners found difficulty in maintaining their achievement consistently and were not in an advantageous position.

Academic attainment of smokers and non-smokers among students of intermediate and postgraduate classes was studied by Srivastava (1975). In students of both the arts and science faculties, smoking showed a negative relation with academic attainment.

Studying the non-formal science activities in secondary schools of Maharashtra State, Shinde (1982) found that academic achievement in science of the students was not related to involvement in non-formal science activities. Gayatri (1983) worked on a hypothesis that academic achievement is related to the discrepancy between a student's perception of his academic environment and his orientation.

Language ability seems to have some influence on acquiring concepts in mathematics. This is suggested by the study by Mainka (1983) which found that mathematical concepts developed better in pupils good in language and did not develop to their fullest form in pupils poor in language.

According to Mukhopadhyay (1983), comprehensibility of language used in science textbooks is significantly related to different levels of science achievement.

Dass and Garg (1985) studied the impact of pre-primary education on the dropout, stagnation and academic performance of primary school students.

Deshpande (1986) investigated the relationship between homework and achievement. According to the study, there is an indication that students who are given homework would perform better. Naidu (1986) studied the differences in academic achievement between students from formal schools and those from nonformal education centres. Here a mention may be made of the study by Umayaparvathi (1983) which investigated the relationship among literacy attainment, achievement motivation, and intelligence of women attending literacy centres in urban and rural areas in Tamil Nadu.

Before proceeding to the next head of classification, attention is drawn to three studies, namely, Kamlesh (1982), Vimla (1985), and Chauhan (1986). These have studied certain variables in relation to the performance of students in the sports field. Kamlesh (1982) made a comparative study of high and low achievers in track and field events on variables as measured on Raven's Standard Progressive Matrices, the Torrance Test of Creative Thinking, the Eysenck Personality Inventory, the Dutt A-S Reaction Test and the Anxiety Scale. Vimla (1985) studied the track performance of secondary school students in relation to achievement motivation, socio-economic status and school adjustment. The study by Chauhan (1986) attempted to find the relationship between some anthropometric variables and endurance running performance.

B. EDUCATIONAL LEVEL-WISE ANALYSIS OF THE STUDIES

Formal education of children in India in general is operated at four levels—primary, secondary, higher secondary and higher education. The primary level includes classes I to VII; the secondary level includes classes VIII to X; the next two classes constitute the higher secondary or pre-university level; and further education beyond this point is called higher education. Since a child starts formal education by the time it is six, it is expected that each level will cover a particular age group of students. Also, each level of education is treated as a different unit and the student shifts from one school set-up to another as he moves from the lowest level to the higher levels.

It is observed that educational researchers have generally restricted their work to one of these levels of education, though some have drawn samples overlapping different levels. An attempt is made to group the 96

studies under consideration according to the level from which the researchers have drawn their samples. Analysis of such a grouping shows that a majority of the studies (about 46 per cent) have drawn samples from high schools. The primary level claims about 18 per cent, the higher secondary level about 14 per cent, and the collegiate level about 12 per cent. About four per cent of the studies have cut across levels to include students of a required age group. A few studies have samples of student-teachers or adult learners.

C. SUBJECT-WISE ANALYSIS OF THE STUDIES

A student is required to study different subjects during his educational course. Each of the subjects is unique by itself. It is common experience to find a student achieving high in one subject of study while not doing so in some other. It is therefore necessary to study achievement in different scholastic subjects. Researches have been conducted making the criterion variable, achievement in a particular subject of study, as well as achievement taken in general. Some studies have considered achievement in more than one subject. More than half of the number of studies considered here have worked on achievement in general, that is, taking into account the achievement on several subjects of study taken together. This is followed by the subject science which is considered as general science, life sciences, physics, chemistry and biology in about one-fifth the total number of the studies. Mathematics comes next, claiming about half of the number of studies which have worked on the subject, science. English, Hindi, Oriya, Gujarati, social studies, history, geography, civics, arts, commerce, home science and medicine have drawn the attention of the researchers here and there.

Maybe because of the place of science and technology in the country's progress, achievement in science and mathematics is becoming a concern for all involved in the educational progress of students. This is reflected by the choice of the researchers in studying achievement in these two subjects in relation to various other variables.

SUMMING UP

A look back into all the researches done with regard to the correlates of achievement brings out the gaps and overlaps, and helps in identifying the direction in which

further researches in the area may be undertaken.

A bird's eye view presents a picture of a bunch of studies which, though they bring out significant conclusions, do not lead towards a concretized generalization. This seems to be quite understandable. Achievement in a child is caused, promoted and affected by various variables, like variables arising out of the person or self, variables arising out of the teaching-learning set-up, variables arising out of the home, variables arising out of subject of study, and so on. Each one of them is actually a cluster of variables which individually or on interaction with others have their influence on achievement. Thus, to understand the construct of achievement it requires systematic and sustained research.

Further, it must be noted that a child enters the formal stream of education by around five or six years of age and probably will be in the stream till it attains adulthood, provided it does not drop out of the system. Achievement, to be considered as a concept cutting across this long duration, does not seem fit. The period of education almost goes along with the various developmental stages of the children. To some extent, the various levels of education could be considered as the various cut-off points in the development of the child within which certain broad pictures of how the different correlates would operate in relation to achievement could be studied.

A rough analysis of the number of researches conducted with samples drawn at different levels of education indicates that high school is the much preferred level. This may be because this age-group is more

amenable for handling class situations. It may also be that there is an easier availability of different tools to measure the variables for this age group. Thus one can visualize a need for more research efforts in the other levels of education. Maybe, as a corollary, it is also necessary to develop tools to measure suitable variables at these levels.

Another important aspect to which attention must be drawn is that achievement should not be considered global or general, over all the different subjects of study. Each subject of study requires a specific set of mental operations, though sharing something common with other subjects. The different variables will not have the same degree of relationship with different sets of mental operations. A student who is good in memorizing certain facts may not be so in drawing conclusions based on reasoning. The analysis shown earlier indicates that the bulk of the studies deal with achievement in general, though some stray attempts have been made with reference to a particular subject of study. Sustained researches have to be carried out with reference to the different subjects of study separately. Such researches may be of great help to teachers, school administrators and to guidance and counselling workers. Putting the aspects of different levels of education as well as different subjects of study together, it may be said that intensive studies to find out the factors which contribute to achievement in different subjects at various levels have to be undertaken. This needs a planned effort which calls for interested groups of researchers to pool up their efforts to work specifically in the area of achievement.

ABSTRACTS: 917—1003

917. AGRAWAL, S., *A Study of Medical Aptitude and Other Psychological Variables Associated with Proficiency in Medical Examinations of U.P.*, Ph.D. Psy., Agra U., 1973

The present investigation was started to find out as to how far psychological variables like medical aptitude, adjustment, intelligence and interest were associated with proficiency in medical examinations of UP.

The sample comprised 629 students of five different medical colleges of UP. To measure adjustment of medicos, the Saxena Adjustment Inventory was used. It measured five types of adjustment, and college or school adjustment. The measurement of intelligence was done by the Group Test of General Mental Ability (20/52) developed by Jalota and Tandon. Interest in medical studies was measured by Chatterji's Non-Language Preference Record. The medical examination marks were collected from the records. Data were analysed by computing mean, standard deviation and critical ratios.

The findings were: 1. The adjustment was negligibly related with medical examination marks. 2. Intelligence was highly correlated with examination marks of medical students. 3. Interest was highly related to proficiency in medical examinations. 4. The correlations between combined scores of intelligence and aptitude and medical examination marks were positive. These variables contributed quite significantly to the examination success in medical courses. 5. The correlations between combined scores of intelligence, interest, and aptitude and medical examination marks were high. 6. The correlations of combined scores of intelligence, interest, aptitude, and adjustment against medical examination marks were high. 7. There was no significant relationship between age and adjustment for the age group 17 to 24 years. 8. In the field of intelligence, age seemed to have a declining effect on mean scores from 17 to 24 years. 9. There was no significant relationship between interest and age. 10. The aptitude test scores declined with age from 17 to 24 years. 11. Adjustment, and intelligence were positively influenced by increase in economic status, while interest showed a negative influence.

918. AGRAWAL, S., *The Study of Causes and Their Remedial Measures of Two Groups of Xth and XIIth Class of relatively Identical Intelligence but Differing in Educational Achievements*, Ph.D. Edu., Gor. U., 1982

The objectives of the study were (i) to determine the degree of relationship between independent variables—socio-economic status (SES), interest, intelligence and adjustment and the dependent variable academic achievement, (ii) to determine the degree of influence of interest, adjustment, and SES on the scholastic achievement, keeping intelligence as constant, (iii) to estimate the amount of contribution made by the causal variables, interest, SES, adjustment and intelligence, to achievement, and (iv) to suggest remedial measures for the improvement in academic attainment of the students. The hypotheses were: (1) There is no relationship between independent and dependent variables. (2) The contributions of all the predictors, viz., interest, adjustment, SES and intelligence, to the criterion variables is equal.

The first hypothesis was checked on the basis of the obtained values of the coefficient of correlation; the second hypothesis against the amount of regression coefficient for the predictors. M.C. Joshi's Test of Mental Ability (Verbal), the Adjustment Inventory by A.K.P. Sinha and R.P. Singh, the Socio-economic Status Scale, Form B (Urban), by S.P. Kulshrestha and the Interest Inventory designed by the investigator were used in this study. The sample comprised 550 girls of both science and humanities groups from the higher secondary and intermediate schools of Gorakhpur, Basti, Deoria and Azamgarh districts. The stratified random sampling technique was adopted. For remedial measures, 100 teachers of the same institutions and classes were selected randomly.

The conclusions drawn were as follows: 1. The scores of the high school and intermediate class girls on the independent variable as well as on the dependent variable showed a slight deviation from the plan of normal probability. 2. All the three factors, viz., interest, adjustment and socio-economic status, played a positive role in the academic achievement of the girls of the X and XII science classes. 3. These factors did affect the girls' achievement. 4. The inter-correlations between dependent and independent variables were found to be positive in the cases of both X and XII science girls which supported the view that these variables had a positive effect on achievement. 5. The regression weights indicated that interest appeared to be making the highest contribution to academic success in case of high school science girls, with

SES making the highest contribution to academic success at the intermediate level. Intelligence made the least contribution at both the levels. 6. The multiple correlation revealed that approximately 50 per cent and 70 per cent variance were caused due to the variables selected for study in the case of intermediate and high school science girls respectively. 7. The hypotheses made regarding the zero correlation between variables and equal contribution of the predictors to success were not supported. 8. Remedial measures suggested by the teachers stressed free education to lower income group students, freedom to employ suitable teaching strategies, manageable class size in order to pay individual attention, theory correlated with practice and giving importance to individual interest in schools.

919. BARUA, U., *Influence of Capacity of Memorization on Scholastic Achievement*, Ph.D. Edu., Cal. U., 1981

The objectives of the study were (i) to determine common relations, if any, among different kinds of memory, (ii) to ascertain the nature of sex differences, if any, in memory abilities, (iii) to obtain the relation between memory and intelligence, (iv) to find out the relative influence of different kinds of memory on scholastic achievements, and (v) to consider the position of memory and intelligence as determiners of academic performance.

The sample comprised 200 students, 100 boys and 100 girls of age 9-11 years of class VI of two high schools. The study used a test of memory for story, sentence, design and digits, the Intelligence Test, developed and standardized by G. B. Kapat and Kuppaswamy's Socio-Economic Status Scale. Factor analysis with varimax rotation and regression analysis were used for drawing conclusions.

The major findings were: 1. Boys and girls were not different with respect to memory for story, sentence, design, digits and total memory. 2. Memory for digits had a definite but small relationship with memory for a story. 3. Memory for digits had a very low relationship with intelligence; also memory tended to be independent of intelligence. 4. Boys and girls were not different with respect to intelligence and total scholastic achievement. 5. If learning materials were so presented as to appeal both to intellectual and non-intellectual aspects of the educands, they would engender better learning and achievement. 6. Children of the age-group 9-11

years understood design more meaningfully than stories. 7. Meaningful learning occurred through meaningful visual aids or iconic signs.

- *920. CHAKRABARTI, S., *A Critical Study of the Effect of Mental Ability, Socio-economic Background of the Family, Educational Environment in the Family and Quality of the School on the Academic Achievement of Children of Std. V: A Case-study of Some Schools in and around Pune*, Ph.D. Edu., Poona U., 1988

(See Abstract 346)

921. CHAUHAN, M.S., *The Relationship between selected Anthropometric Variables and Endurance Running Performance*, Ph.D. Phy. Edu., Kur. U., 1986

The objectives of the study were (i) to draw a comparison of selected anthropometric measures among different groups of endurance runners, (ii) to determine the comparison of selected anthropometric variables of endurance runners at different levels of participation within the group, (iii) to determine the correlation of endurance running performance with selected anthropometric variables, (iv) to determine the correlation of body density with the anthropometric variables, (v) to set up a regression equation for the prediction of endurance running performance from selected anthropometric variables, and (vi) to set up a regression equation for the body density of the athletes from the selected anthropometric variables.

The sample of the study consisted of endurance runners who participated in 1500 metre, 5000 metre and 10,000 metre runs at the inter-collegiate, state, inter- varsity and national athletic meets and attended the different camps for participation. A total sample of 224 endurance runners was taken. Their age ranged from 18 to 30 years. The linear body segments were measured by anthropometer. They were height, sitting height vertex, trunk length and leg length. Lange's skin fold calipers were used to measure the body density, fat weight, fat percentage and lean body mass. Different circumferences of the body were measured with the help of vernier calipers. All these measurements were taken one hour before and after the completion of physical activity.

The findings of the study were: 1. Linear measurements like height, sitting height, total leg length, fore-leg length, trunk length, foot length, and foot breadth of 1500 metre runners were greater than those of 5000 metre and 10,000 metre runners. 2. The girth measurements, i.e. shoulder, chest, abdomen, hip, thigh and calf of 1500 metre runners were greater than those of the 5000 metre and 10,000 metre runners. 3. Abdomen and hip girth measurements were larger in 5000 metre runners than in 10,000 metre runners. Calf girth was larger in 10,000 metre runners than in 5000 metre runners. 4. The biacromial diameter, bitrochanteric diameter, femur bicondylar and ankle diameter of 1500 metre runners were larger than those of 5000 and 10,000 metre runners. 5. All the three groups of endurance runners, i.e. 1500, 5000 and 10,000 metre runners, had statistically similar triceps, biceps, subscapular, suprailiac, thigh and calf skinfolds. 6. Body density of 1500 metre runners was greater than that of 5000 metre runners but less than that of 10,000 metre runners. 7. Body fat weight of 1500 metre runners was greater than that of 5000 metre runners but similar to that of 10,000 metre runners. 8. Lean body mass in 1500 metre runners was found to be greater than that in 5000 metre and 10,000 metre runners. 9. Sitting height and biacromial diameter of 1500 metres at inter-varsity level were greater than those of inter-collegiate level. 10. All the measurements of 1500 metre runners had insignificant differences, except thigh skinfolds and foot breadth, which were greater in state level runners than other level players. 11. Height, trunk length, chest girth, thigh girth, hip girth, calf girth, femur bicondylar diameter and ankle diameter, mid-axillary skinfold and suprailiac skinfold, fat percentage and body fat weight of 5000 metre runners at inter-collegiate level were significantly greater than those of inter-varsity level runners. 12. Various skinfolds, i.e. triceps, subscapular, suprailiac, mid-axillary, thigh and calf skinfolds, fat percentage, and body fat weight of 10,000 metre runners at inter-collegiate level were significantly greater than those of runners of inter-varsity level. 13. Correlations of age, body weight, height, thigh length and leg length with 1500 metre, 5000 metre and 10,000 metre performance were positive and significant. 14. Correlations of biacromial diameter, ankle diameter and femur bicondylar diameter with 5000 metre running performance were positive and significant whereas correlations of these diameters with 10,000 metre running performance were not significant. 15. Correlation of lean body mass with 1500 metre running performance as well as with 5000 metre running performance and correlation

of body density, fat percentage, total body fat weight with 10,000 metre running performance were positive and significant. 16. Multiple correlation of 1500 metre endurance running performance with height, thigh circumference, biacromial diameter and thigh skinfold was positive and significant. 17. Multiple correlation of 5000 metre endurance running performance with thigh circumference, femur bicondylar diameter, thigh skinfold and weight was positive and significant. 18. Multiple correlation of 10,000 metre endurance running performance with triceps skinfold, suprailiac skinfold, thigh skinfold and calf skinfold was positive and significant. 19. Multiple correlation of body density of athletes with four variables, i.e. height, bitrochanteric diameter, subscapular and calf skinfolds was positive and significant.

922. DAS, N.C., *A Psychometric Study of Low Achievement of School Final Candidates in General Science*, D.Sc. Psy., Cal. U., 1975

The main objectives were (i) to find out factors responsible for low pupil achievement in general science in the School Final Examination (SFE) held by the West Bengal Board of Secondary Education (WBBSE), (ii) to compare the intelligence and anxiety of the school final candidates who succeeded and who failed in general science in the SFE and determine the interrelationship among these variables in order to see to what extent intellectual and emotional factors affected scholastic achievement in general science at this stage of education, and (iii) to analyse the syllabus and the question-items of the general science question paper and to suggest measures for the improvement of teaching and learning of general science in high schools.

In all 61 high schools were chosen out of 732 high schools of six districts of West Bengal as the sample for detailed study of 985 students, both boys and girls, out of 1000 who were sent up by these institutions to the SFE, 1968, held by the WBBSE. The sample of science teachers, both male and female, was drawn from 567 high schools. Systematic sampling was adopted for selecting samples of teachers and students. The marks obtained by the students in mathematics (compulsory) and general science in the SFE, 1968, were also collected. The IPAT Culture-Free Intelligence Test (Scale 3-Form B) of Cattell and Cattell, and the IPAT Anxiety Scale Questionnaire of Cattell, and Scheier, as adopted by Rao and Roy, respectively were used to measure in-

telligence and anxiety of students. A questionnaire seeking information regarding different aspects of low achievement of students in general science in the SFE was also developed. The Centroid Method and the method of Principal Components along with Varimax Rotation for identifying the factors were applied.

The study revealed: 1. The syllabus for general science of the School Final Examination was inadequate; physics was over-emphasized, chemistry and botany were neglected; astronomy and geology were not included in the syllabus. There was no scope for practical work by students. Out of 37 concepts included in the syllabus of general science, only 19 were covered by the question paper. The knowledge aspect was tested, but the application aspect was neglected. 2. Students who passed in general science possessed higher IQ than those who failed in the subject. A positive correlation existed between intelligence and achievement in general science. 3. There was no significant difference between anxiety scores of those passing in general science and those failing in the subject. 4. Pupil personality turned out to be the most powerful component responsible for performance in general science. 5. Students who passed in general science obtained higher marks in mathematics than those who failed in the subject. 6. IQ marks in mathematics and general science showed highly significant inter-correlations. 7. Students' personality was considered by the teachers as contributory to low achievement. 8. Pupil personality, teachers' incompetence and socio-economic factors were the primary factors responsible for low achievement in general science.

923. DAS, S., *Peer Influence and Educational Aspiration of Secondary School Students, A Study in relation to Their Academic Achievement*, Ph.D. Edu., MSU, 1986

The objectives of the inquiry were (i) to study the effects of area of institution, nature of institution and their interaction on peer influence of students, (ii) to study the effects of intelligence and socio-economic status and their interaction on peer influence of the students, (iii) to study the effects of area of institution, nature of institution and their interaction on educational aspirations of students, (iv) to study the effects of intelligence, socio-economic status and their interaction on educational aspirations of students, and (v) to establish the regression equation for academic achievement in relation to intelligence, socio-economic status, peer

influence and educational aspirations for different sample groups.

The tools used for the study were: (a) Bora's Group Verbal Examination of General Intelligence Test, (b) Narain Rao's Socio-economic Status Rating Scale, (c) an Adapted Version of Mathur's Educational Aspiration Scale, (d) the Peer Influence Scale prepared by the investigator, and (e) examination scores of the HSLC examination. The sample of the study included 820 students of class X of 20 schools of Assam state. Analysis of variance and regression analysis were used for analysis of data.

The major findings of the study were: 1. Peer influence was stronger among the students of rural schools in comparison with those of urban schools. 2. Peer influence was strongest among students of boys schools and least in the girls schools. 3. The educational aspiration of students belonging to urban schools was higher than that of students of rural schools. 4. The high intelligence group had higher educational aspiration than the students of low intelligence group. 5. Students of the high socio-economic status group had higher educational aspirations than students of the low socio-economic status group. 6. Intelligence was the most powerful predictor of academic achievement, contributing 40.26 per cent of total variance. 7. Educational aspiration was the second most powerful predictor bearing 8.58 per cent of variance. 8. More predictability was observed in the rural group in comparison with the urban group. 9. The highest predictability was observed in the coeducational school group which accounted as 67.22 per cent of variance in comparison with the boys school group (56.61 per cent) and the girls school group (47.38 per cent).

924. DEKA, U., *School Failure: A Causal-Comparative Study of High and Low Achievers*, Ph.D. Edu., Gau. U., 1985

The study was undertaken to find out the causative factors behind the academic success or failure of the students by mainly comparing the characteristics of the high and low achievers. Various hypotheses were formulated relating to proficiency in the basic subjects, psychological dimensions, home and school.

The sample consisted of 80 students from six high schools of Darrang district, equally representing three distinct criteria—achievement, residence and sex. The selected high school represented the district headquarter.

ters, growing townships comprising suburban and rural areas. A comparative analysis was made on the group of successful and unsuccessful students in the sample. Apart from the previous examination marks of the students, vocabulary, spelling, knowledge and arithmetic tests were used to measure achievement variables. Psychological variables were examined by intelligence, motivation, and personality tests. Personal data forms were specially prepared to elicit information relating to home, school and neighbourhood. Physical health conditions of the students were inspected with the help of qualified physicians. The significance of differences between successful and unsuccessful students was determined by using t-test, chi-square test; etc.

The major findings were: 1. Low-achievers always performed poorly in their school examinations and had greater incidence of school failure. Low proficiency in certain basic subjects such as vocabulary, spelling, general knowledge and arithmetic, was significantly and positively related to school failure. Proficiency of the students in their basic subjects was not affected by residence and sex variables. 2. School failure was significantly and positively related to general mental ability. Intelligence of high and low achievers was not affected by residence and sex variables. Low scholastic achievement was significantly and positively associated with inferior leadership qualities and less adventurousness. School failure was unrelated to creativity skills, non-achievement and certain personality characteristics. Sex affected certain personality factors such as adventurousness, tendermindedness, self-sufficiency, emotional stability and excitability. 3. School success and failure were significantly and positively related to family income, involvement in domestic activities and home study, while they were unrelated to parental education and occupation. 4. School failure was positively associated with school attendance, preparation of school work, understanding of lessons, preparation for examinations, favourable attitude of teachers and early school leaving. School attendance and home study were not affected by residence and sex. The urban low achievers or low achieving girls did more domestic work than high achievers. Father's education of urban low achievers was inferior to that of urban high achievers. 5. School failure gave rise to unfavourable attitudes towards teachers and two major subjects of study—English and mathematics. Incidence of school success and failure was positively associated with study facilities at home and future vocational plans. High achievers preferred to enter some standard vocations like

medicine, engineering and high school and college teaching, while low achievers contemplated becoming primary teachers, nurses, clerks, businessmen and technical workers. Caste, physical health conditions and attitude towards school were unrelated to academic success and failure.

The significant educational implications were that the school achievement would be controlled for better results by, (1) selecting only those who have the necessary aptitude for the high school course, (2) directing less academically oriented students to vocational courses or courses involving more psycho-motor skills than mental work, (3) providing remedial measures to those who showed marked deficiencies in school subjects, and (4) educating parents to understand their children with respect to their interest, motivation and involvement in the school work.

925. DESHPANDE, A.S., *A Study of Determinants of Achievement of Students at the SSC Examination in the Pune Division of Maharashtra State*, Ph.D. Edu., Poona U., 1984

The objectives of the study were (i) to identify the schools giving extremely good or poor results in three consecutive years and to locate the causes of their performance, and (ii) to suggest some remedial measures on the basis of the empirical findings for the improvement of low-achieving schools.

High- and low-achieving schools were identified from the Pune-Pimpri-Chinchwad corporation area. Nine high- and nine low-achieving schools were chosen as the sample of the study. A group of 40 to 50 class IX students (779 in total) of sample schools were administered the tools. The sample size of teachers from both the categories of schools was 105. The tools administered for data collection were Raven's Standard Progressive Matrices Test, Palsane's Study Habits Inventory, the Taylor Manifest Anxiety Scale, Prayag Mehta's Achievement Values and Anxiety Inventory, a modified version of the Organisational Climate Descriptive Questionnaire of M.L. Sharma, and Dekhtawala's (1977) Teacher Morale Inventory. All the tools were administered on the respondents by the researcher individually. The statistical tests used for analysis of data were descriptive statistics, t-test and bi-serial correlation.

The findings of the study were: 1. The students from the high-achieving schools were higher in intelligence than their counterparts in the low-achieving schools.

2. The students from the low-achieving schools were more anxious than the students of the high-achieving schools. 3. Achievement motivation was found to be higher in the students of the high-achieving schools than those of the low-achieving schools. 4. There was no difference in the study habits of the students from both the types of schools. 5. The teacher morale was higher in the high-achieving schools than in the low-achieving schools. 6. There was not much difference in respect of a specific trend of organizational climate in the high and low-achieving schools. 7. Intelligence, anxiety and achievement motivation explained much of the variance between the high- and low-achieving schools. The teacher morale was also different in these schools but the difference was negligible.

926. DESHPANDE, S., *Interactive Effects of Intelligence and Socio-economic Status of Students and Homework on the Achievement of Students*, Dept. of Education, Kar. U., 1986 (UGC financed)

The specific objectives of the study were (i) to construct separate attitude scales to determine the attitudes of students, teachers and parents towards homework, (ii) to determine the effect of massed *vs.* spaced homework and immediate *vs.* delayed evaluation on the achievement of students classified under high, average and low intelligence, and (iii) to determine the effect of homework on the achievement of students classified as high, average and low in intelligence and coming from three socio-economic levels.

The study was conducted in three phases. The first was an attitudinal study and the other two were experimental studies. The randomly selected samples for the first phase consisted of 382 secondary school students, 224 parents and 162 teachers. In the second phase, to test the hypothesis generated by the second objective, a $3 \times 2 \times 2$ factorial experimental design with three levels of intelligence (high, average and low), two levels of homework (twice a week, once a week) and two levels of delay in evaluation (immediate and delay of three days) was set up on the basis of scores on an intelligence test. Students were categorized into high, average and low intelligent groups. The 60 students in each group were further subdivided randomly into four groups, each consisting of 15 students. The final sample, due to experimental mortality and other reasons, was only 114 secondary school students. The experimental design in the third phase, to test the hypothesis generated by the

third objective, was a $3 \times 3 \times 2$ factorial design with three levels of intelligence, three levels of socio-economic status and two levels of homework (homework given and not given). The sample for this phase of the study consisted of 191 secondary school students. Wherever possible the subjects and treatment were randomly assigned. The instruments were three Likert-type scales to measure attitudes of students, teachers and parents. All the scales had content validity and their reliabilities (split-half) were 0.8571, 0.78 and 0.74 respectively. Parallel-form achievement tests in a topic in standard IX, biology, were constructed (the reliability coefficient was 0.712). Intelligence was measured by the Chinnamma Satyananda Verbal Test and socio-economic status was measured by Kuppaswamy's scale. The gain scores in achievement of the students were analysed by using the two-way analysis of variance by the technique of unweighted means for unequal cells as well as one-way ANOVA and t-tests.

The findings were: 1. Students, parents, teachers, girl students and students of middle and upper socio-economic status had a more favourable attitude towards homework. 2. No significant differences in their attitudes towards homework were found when teachers were classified under the four variables of marital status, sex, age and teaching experience. 3. Parents with an only child had significantly less favourable attitudes towards homework than parents with two or more children. 4. The amount of homework and delay in evaluation of homework were not significantly related to achievement of students. 5. Intelligence was significantly related to achievement at the 10 per cent level. 6. Intelligence was significantly related to achievement at the 1 per cent level. 7. The trend of the relationship between homework and achievement indicated that students who were given homework performed better.

*927. DHAR, N., *Personality Profiles of the Socially Rejected and Their Academic Performance*, Ph.D. Edu., Kashmir U., 1986

The objectives of the study were (i) to identify the socially rejected subjects, (ii) to identify the personality profiles of the rejectees with reference to the below-average group, trait clusters, degree of rejection and sex-differences, and (iii) to find out the academic preferences of the socially rejected with reference to the below-average group, and the degree of rejection.

A sample of 76 rejectees was identified out of 1020

university students on sociometric questionnaire. The tools used in the study were (i) A locally developed sociometric questionnaire, (ii) the Cattell 16 PF (1934) Questionnaire and (iii) the academic performance of the students. The data were analysed with the help of t-test and chi-square.

The findings of the study were: 1. The rejectees had a specific personality profile characterized by a set of traits, namely assertiveness, happy-go-lucky, suspiciousness, forthright, and apprehensive. 2. The rejectees were characterized by a cluster of traits on the 16 PF questionnaire, namely, affected by feelings, sober, expedient, suspicious, practical, shrewd, and apprehensive. 3. The degree of rejection did not vary with the degree of traits. 4. The girls varied on a set of personality factors from the boys. Girls were sober, shy, tender-minded, apprehensive, and undisciplined, whereas boys were happy-go-lucky, venturesome, tough-minded, placid and controlled. 5. Academic performance of rejectees was poor. 6. Academic performance did not vary with the degree of rejection.

928. DIXIT, MITHILESH KUMARI, *A Comparative Study of Intelligence and Academic Achievement of Adolescent Boys and Girls Studying in Classes IX and XI*, Ph.D. Edu., Kan. U., 1985

The investigation was designed as a comparative study of the academic achievement and intelligence of adolescent boys and girls studying in classes IX and XI.

The sample for the study consisted of 800 students studying in classes IX and XI. Half of them were boys and half were girls. Jalota's Group General Mental Ability Test was administered to the subjects to get an idea about their mental ability and marks obtained by them in the annual examination were taken as the criterion of academic achievement.

The main findings of the study were: 1. Among class XI students there was no difference in the academic achievement of intellectually superior and intellectually very superior boys and girls. 2. At all other intellectual levels the academic achievement of the girls was superior to that of the boys. 3. Among class IX students there was no difference in the academic achievement of intellectually very superior and intellectually superior boys and girls. 4. At all the other intellectual levels the academic achievement of the girls was superior to that of the boys. 5. In general the intelligence test scores of the boys were higher than those for the girls. 6. In case of

the boys there was very high correlation between intelligence test scores and academic achievement. 7. In the case of girls there was an average correlation between intelligence test scores and academic achievement.

929. DOCTOR, Z.N., *A Study of Classroom Climate and the Psyche of Pupils and Their Achievement*, Ph.D. Edu., SGU, 1984

The major objectives were (i) to find out the classroom climate and psyche scores of classes, (ii) to study the profiles of the classrooms of high and low climate, (iii) to have an in-depth study of teacher behaviour in classrooms of high and low climate, (iv) to compare the master profiles of classrooms having high climate and low climate, and (v) to study the sociograms of classes having high and low classroom climates.

Thirty classes which covered 1279 pupils from all types of schools were selected from Valsad and Surat districts. The tools used were the Classroom Climate Scale, Junior Index of Motivation Scale, Students' Expectancy, Adjustment, Classroom Trust, and Dependency and Independency Scale. Besides, a scale to measure the behaviour of the teachers and the pupils and the Ohio Sociometry Scale to measure the sociability of the pupils were used.

The major findings were: 1. Each classroom had its own individuality. A classroom with high classroom climate had high pupils' psyche. 2. Classroom climate had consistency with academic achievement. 3. Academic achievement was highly dependent on 'independency of pupils'. 4. Adjustment was closely linked with classroom trust and expectancy. 5. Classroom climate and pupils psyche were more connected with independency and dependency. 6. Academic achievement was dependent on teachers' and pupils' behaviour, pupils' psyche and classroom climate. 7. From the climatograph, it was found that in independency, academic motivation, legitimacy, etc., the scores of most of the schools were less than the scores on other variables taken in the study.

*930. DORAISWAMY, M., *Achievement Norm Study of Elementary School Children of Tamil Nadu with special reference to Certain School Factors and Student Composition*, SITU Council of Educational Research, 1985

The specific aims of this project were (i) to assess the

general performance of elementary school students in first language and arithmetic, (ii) to determine school differences in the performance of elementary school children in first language and arithmetics, (iii) to compare the standards of attainment reached by children of different social composition studying in different school locations, and (iv) to study the main effects and interaction effects of school locations and social composition of children on standards of attainment in first language and arithmetic.

The elementary schools located in different districts constituted the universe of study. The object was to ensure as much dispersion as possible within the state. The schools were selected with the help of state education officers. A total of 109 schools classified as urban, rural, hilly and coastal responded to the questionnaire of this project. Of these, data were completed only from 46 schools. Test papers were developed for Tamil I and Tamil II, and arithmetic by following scientific principles of test construction. The tests were administered to the students of the schools which responded to the questionnaire designed for the project. The questionnaires were developed to elicit information relating to school conditions and home background of the individual child. The chi-square technique was used to study the significance of the differences due to effect of school conditions and home background on the performance of the children.

The main findings were: 1. The performance of the students in the vernacular and arithmetic was by and large good. In respect of students from hilly areas it was slightly less. 2. The performance of students in urban areas was better than that of students of rural areas. 3. The performance of students in the initial classes was not significantly dependent upon the nature of management of the school. 4. The income range of the parents did not have any adverse effect on the performance of students.

931. GAYATHRI, H.R., *Educational Orientations and Related Factors Effecting the Academic Achievement of University Students*, Ph.D. Psy., JNU, 1983

The hypotheses were: (1) Different patterns of educational orientations, identifiable as the preparatory and exploratory orientations, exist among students. (2) Students perceive their academic environment in different ways—identifiable as the preparatory and exploratory

perceptions. (3) The cognitive style of students, as measured by the field dependent/field independent dimension influences the orientations/perceptions of students. (4) The academic achievement of students is related to the discrepancy between a student's perception of his academic environment and his orientation.

The sample consisted of 1100 students (418 boys and 682 girls) selected from a number of colleges affiliated to the Bangalore University. The students from the final year B.A. and B.Sc. courses were chosen as orientations were expected to have stabilized after two years at the college. The Student Orientation Perception Questionnaire (developed by the author), a background information sheet, a short form of Witkins Embedded Figures Test (Jalkson, 1956), and Academic Satisfaction Scale (on the basis of a questionnaire developed by Morstain, 1977) were used to collect the data. For analysing the data, all the raw scores were converted into standard score values. T-tests were computed on all dimensions of orientations/perceptions and correlations and partial correlations were computed between the discrepancy variables on all dimensions and the criterion variable, academic achievement. Correlations were also computed between the dimensions of discrepancy and academic satisfaction of students.

The major findings were: 1. Students endorsed a variety of education orientations, ranging from an expressed need for a highly structured environment to one that was not at all structured. Further educational orientations of students showed no variations by sex but by curricula. Science students expressed a stronger exploratory orientation than arts students. 2. Students perceived the academic environment in different ways, viz. as having moderately preparatory to a moderately exploratory characteristic. There were significant variations in students' perceptions of environment by boys and girls whereas there were no significant differences in students' perceptions of environment in the arts and science curricula. 3. The students coming from a higher SES background tended to express an exploratory orientation towards education. 4. The cognitive style variation of students did not lead to any significant variations in perceptions of environment. 5. Schooling in public and central schools provided a background of experiences more suited to the study of exploration of ideas and knowledge, than did private/convent schools. Government school training resulted in a distinctly preparatory orientation. 6. Students with a field dependent cognitive style were found to express a definite prepara-

tory orientation, with an expressed need for continual feedback, structured coursework and organized activity. Students with a field independent cognitive style endorsed an exploratory orientation, preferring to work independently and with less structure in their environment. 7. The academic achievement of students was significantly influenced by the discrepancy between the expressed educational orientations and the perceived academic environment. 8. The academic satisfaction of students was inversely related to the discrepancy between students' educational orientations and perceptions of the environment.

932. GIRIJA, P.R., *A Study of Intellectual and Non-intellectual Factors in Academic Achievement of Advantaged and Disadvantaged Students from Professional Colleges*, Ph.D. Psy., Kar. U., 1980

The purposes of this investigation were (i) to determine to what extent the intellectual (verbal and non-verbal intelligence) and non-intellectual factors (study habits and skills, personality, values, motivation, anxiety, non-academic accomplishments and biographical factors) contributed to the improvement in the prediction of academic performance in addition to the admission criteria, and (ii) to explore whether the variables that were valid for academic prediction remained so for agricultural and animal science curriculum groups and advantageous and disadvantaged groups.

The sample consisted of 788 students who were admitted to the university of agricultural sciences for the first degree in agricultural sciences. Of these, 588 were admitted to various courses in agricultural sciences and 200 were admitted to animal science courses. The instruments used in the study were the EPPS, Wrenn's Study Habit Inventory, Tyler and Kimber's Study Skills Test, Gordon's Personal and Interpersonal Values, Myer's Academic Achievement Motivation Scale, Raven's Standard Progressive Matrices, Jalota and Tandon's General Mental Ability Test and a biographical questionnaire developed by the researcher. Data were collected by administering the instruments and the criterion, the cumulative grade point average (CGPA)—the first-year college achievement scores were obtained from the records. Stepwise regression analysis, discriminant analysis and canonical correlation techniques were used to analyse the data.

The major findings were: 1. Preuniversity marks (PUM) were the only common and effective predictor

of the CGPA for the total sample, for agricultural and animal science curriculum groups and for advantageous and disadvantaged groups. 2. The prediction of CGPA was significantly improved by the addition of intellectual and non-intellectual variables to the admission measure for all the groups. 3. The overall results of the various groups revealed that out of 62 predictor variables, 32 were potential contributions to CGPA. They were PUM, progressive matrices test scores, general mental ability, number of previous academic failures, study habits, skill in recognizing abbreviations, leadership qualities, performance anxiety, desire for recognition, planning work efficiently, competitive, dependence, practical mindedness, achievement, need for support, conformity, benevolence, personal and biographical factors like caste, permanent residence, place of education, medium of instruction during primary education, source of income, guidance to choose vocation, parental aspiration, occupational aspiration, age, scholarship awarded, self-estimated ability, accomplishment in areas of literature, social service, dramatic art and music.

933. GROVER, S., *Parental Aspiration as related to Personality and School Achievements of Children*, Ph.D. Psy., Pan. U., 1979

The objective of the study was to find out the relationship between parental aspiration, certain personality traits and the school achievement of the children.

The primary sample of the study consisted of 523 high school children, selected from two schools of Chandigarh city. After administration of Raven's Progressive Matrices, the sample left was of 465 boys with an average IQ. The parents of these children also formed the sample for the study. The final sample for the study was arranged in two ways. Firstly of 25 per cent high, 25 per cent middle and 25 per cent low aspiring parents were taken. There were 30 fathers, 30 mothers and 30 sons in each of high, average and low groups forming the sample of study. Secondly, four groups of fathers and mothers showing the combination of high and low aspiring mothers and fathers formed the sample of study. The four groups were: (i) high aspiring fathers, high aspiring mothers; (ii) high aspiring fathers, low aspiring mothers; (iii) low aspiring fathers and high aspiring mothers; (iv) low aspiring fathers and low aspiring mothers. In each group ten fathers, ten mothers and their ten sons were taken. So it was 40 fathers, 40 moth-

ers and 40 sons. The tools used in the study were: (i) Raven's Standard Progressive Matrices; (ii) the Parental Aspiration Scale (the split-half reliability coefficient of the scale was 0.94 for fathers and 0.76 for mothers; the scale had factorial validity); (iii) The Cattell High School Personality Questionnaire; (iv) the Deo Personality Word List (1971); (v) the school achievement of students (taken from their aggregate scores attained by them in the previous year's examination).

The results of the study revealed: 1. The total sample showed a positive correlation between fathers' and mothers' aspiration. 2. The high aspiring parents showed significant correlation between fathers' high aspirations and the trait of dominance in boys. 3. The low aspiring parents did not show any significant correlation between aspiration of parents and all variables taken for the study. 4. There was significant difference between aspiration of fathers and aspiration of mothers. 5. There was significant difference between school achievements of children of low aspiring parents and middle aspiring parents. 6. There was a significant difference in the trait of guilt-proneness of children belonging to the groups of parents where both father and mother were high aspiring and where both father and mother were low aspiring. 7. There was significant difference between the self-concept of children belonging to the groups of parents where both father and mother were high aspiring and where both father and mother were low aspiring. 8. There was significant difference in the school achievement of children belonging to the groups of parents where father was low aspiring and mother was high aspiring and where both father and mother were low aspiring.

*934. GUPTA, M., *A Study of Relationship between Locus of Control, Anxiety, Level of Aspiration Academic Achievement of Secondary Students*, D.Phil. Edu., All. U., 1987

The objectives of the study were (i) to assess the magnitude and direction of relationship of locus of control, anxiety, level of aspiration and socio-economic status with academic achievement for different groups formed on the basis of curriculum, sex, socio-economic status and internality and externality, (ii) to determine the contribution of locus of control, anxiety, level of aspiration and socio-economic status to the variance in the prediction of academic achievement separately and jointly, and (iii) to find out whether significant mean

differences existed between the different groups formed on the basis of curriculum, sex, socio-economic status and internality and externality, on locus of control, anxiety, level of aspiration and socio-economic status and academic achievement.

The study was a descriptive survey with the composite characteristics of inter-group comparison, correlational and prediction studies. The sample consisted of 670 students of average intelligence drawn from a population of 3,780 students of the eleventh class of Hindi medium schools of Allahabad city, using the random, proportionate and cluster sampling techniques. Curriculum and sex-wise distribution of the sample showed that there were 180 boys from the arts, 240 boys from the science curricula, and 180 girls from the arts and 70 girls from the science curricula. The tools used were the Test of General Mental Ability (M.C. Joshi), Rotter's I.E. Scale adapted in Hindi by the investigator, the W.A. Self-Analysis Form (D. Sinha), the L.A. Coding Test (A. Ansari and G.A. Ansari), the Socio-Economic Status Index (R.P. Verma and P.C. Saxena) and the aggregate marks of the high school examination conducted by the UP Board. The statistical techniques used were measures of central tendency and variability for testing the normalcy of distribution. Besides, zero-order correlations, stepwise multiple regression analysis and t-test were applied to analyse the data.

The major findings were: 1. Locus of control was found to correlate negatively and significantly with academic achievement for the total sample, arts and science students, boys and girls, boys and girls of the arts and science, boys of the arts group belonging to high, middle and low socio-economic status, boys of the science group belonging to high and low socio-economic status, girls of arts group belonging to high socio-economic status only and girls of science group belonging to middle and low socio-economic status. 2. Anxiety was found to have a significant negative correlation with academic achievement for the total sample, arts and science groups, boys and girls, boys of arts group and girls of science group, science girls of the middle socio-economic status, internal boys of the arts curriculum, and external girls of the arts curriculum. 3. Level of aspiration correlated negatively and significantly with academic achievement for the total sample, arts students, boys belonging to arts curriculum, high socio-economic status arts boys and science girls and externality-oriented girls of the science curriculum. 4. Socio-economic status was found to have a significantly positive correlation with academic achievement for the

total sample, arts and science students, boys and girls, boys and girls of the arts and science groups, internally and externally controlled boys of arts and science groups, internally and externally controlled girls of arts group and internally controlled girls of the science group. 5. All the four variables, viz., locus of control, anxiety, level of aspiration and socio-economic status predicted academic achievement but socio-economic status and locus of control were found to be the best predictors. 6. Academic achievement and anxiety differentiated the maximum number of groups.

935. GUPTA, O.V., *Intelligence, Creativity, Interest and Frustration as Functions of Class Achievement, Sex and Age*, Ph.D. Psy., Agra U., 1977

The objectives were (i) to determine status and role of scholastic achievement, sex and age as they related to intelligence, creativity, interest and frustration, (ii) to provide for cross-cultural studies in scholastic achievement, sex, age-wise profiles of intelligence, creativity, interests, and frustration, (iii) to extend through new scientific findings the connotative dimension of adolescence and scholastic achievement, (iv) to trace growth of intelligence, creativity, interests, and frustration during adolescence in boys and girls of different scholastic levels, and (v) to provide scientific facts for creativity education in the Indian setting.

The sample comprised 240 students which was selected through the use of the stratified random sampling technique. They belonged to classes IX, X, XI and XII and their age ranged from 13 to 17 years. Out of 240 students, 120 were males and 120 females. The Group Intelligence Test by R.K. Tandon was used to measure intelligence. Its split-half reliability was 0.93. Creativity was measured with the help of the Creativity Test developed by N.S. Chauhan and G.P. Tewari and its split-half reliability ranged from 0.59 to 0.83. Chatterji's Non-Verbal Preference Record was used to measure the interest of students. Frustration was assessed with the help of a frustration scale developed by N.S. Chauhan and G.P. Tewari. The data were analysed with the help of factorial design analysis of variance of equal cell size followed by Duncan's Range Test.

The findings were: 1. Scholastic achievement promoted intelligence both in boys and girls through the ages of thirteen, fifteen and seventeen years. 2. Intelligence grew up to fifteen years and declined thereafter in high scholastic achievement adolescents and low scho-

lastic achievement girls. Intelligence declined up to fifteen years and grew thereafter in low scholastic achievement boys and high scholastic achievement girls. 3. Scholastic achievement promoted creativity and its components. Fluency and creative production were promoted at fifteen years and thereafter respectively. Originality in girls was demoted at fifteen years but promoted thereafter. Fluency, flexibility and creative production, on high and low levels of scholastic achievement were masculine and feminine, respectively. Creativity grew after fifteen years. Originality grew independent of scholastic achievement. In girls it grew up to fifteen years. Fluency in high achievers grew up to fifteen years in boys and declined in girls. 4. Up to the age of fifteen years, scientific-medical and technical interests were promoted by scholastic achievement and declined thereafter. Scholastic achievement demoted fine arts and outdoor interests up to fifteen years and promoted them afterwards. Scholastic achievement promoted literary and demoted sports interests in boys whereas it demoted literary interests and promoted sports interests in girls. Scholastic achievement demoted household interests. 5. Interests were sex prone. Fine arts, literary, medical, household were feminine but agriculture, technical craft were masculine. Scientific interest was masculine at thirteen years but feminine afterward. Outdoor interest was masculine up to fifteen years and feminine afterwards. 6. In high achievers sports interest was feminine. Scientific and medical interests were feminine up to thirteen years but were masculine afterwards. Outdoor interest was masculine at thirteen years but feminine afterwards. 7. In low achievers, sport interest was masculine, scientific-medical interests were feminine at fifteen years. Outdoor interest was masculine up to fifteen years and was feminine afterwards. 8. Age affected interests. Fine arts and technical interests grew up to fifteen years and declined later on. Outdoor sports and scientific-medical interest grew up to fifteen years and declined thereafter. Technical interests in boys grew after fifteen years, but declined up to fifteen years in girls. Scientific interests grew in boys up to fifteen years and declined afterwards but declined in girls after thirteen years. Fine arts, sport, outdoor and household interests grew in high achievers but sports, outdoor and household interests declined in low achievers. 9. Scholastic achievement affected modes of frustration. Onset of adolescence promoted regression, fixation and aggression. Most of the modes of frustration were denoted by scholastic achievement at the fifteen years age level. Scholastic achievement promoted ag-

gression at seventeen years. 10. Regression was feminine and aggression was masculine. Fixation in low achievers was feminine at thirteen, masculine at fifteen years. It was feminine at seventeen years. 11. Age affected frustration. Regression declined after fifteen years. Regression in high achievers declined in the early part of adolescence but grew in the later part. Reverse was the case in low achievers. Fixation declined after fifteen years. In high achievers it declined but in low achievers it grew. In low-achieving boys, fixation grew at fifteen years and declined thereafter. In low-achieving girls it had a consistent decline. Aggression declined in the beginning of adolescence but grew afterwards in high achievers. In low achievers, it grew at fifteen years but declined afterwards. In high achieving girls aggression declined at fifteen years and grew thereafter but in low achieving girls it grew consistently.

936. JAGANNADHAN, K., *The Effects of Certain Socio-Psychological Factors on the Academic Achievement of Children studying in Classes V to VII*, Ph.D. Edu., SVU, 1985

The objectives of the study were (i) to identify some of the personal and situational variables influencing academic achievement, (ii) to identify some of the socio-psychological variables affecting academic achievement, (iii) To examine the differences in academic achievement among the sub-groups of the personal and situational variables, (iv) to examine the differences in the academic achievement of the sub-groups of socio-psychological variables. (v) to measure the magnitude of individual and cumulative relationship of these socio-psychological variables on academic achievement, and (vi) to formulate equations to predict academic achievement with the help of the socio-psychological variables under study. The hypotheses formulated were: (1) There will not be significant differences in the academic achievement of children belonging to the sub-groups of each of the personal and situational variables, viz., sex, locality, birth order, management, type of school, caste and class. (2) There will not be significant differences in the academic achievement of children belonging to the different levels of each of the socio-psychological variables, viz., socio-economic status, academic motivation, pupil's perception of school environment, pupil's role expectations, intelligence and home environment. (3) The relationship between each of the socio-psychological varia-

bles and academic achievement will not be significant whether the effects of other socio-psychological variables are partialled out or not. (4) The multiple effect of two or more socio-psychological variables on academic achievement will not be significant. (5) A substantial portion of academic achievement will not be explained with the help of these socio-psychological variables.

The following tools were developed by the researcher: (1) Achievement Tests in Telugu, mathematics, general science and social studies, (2) a questionnaire for pupils and their teachers to measure 'pupils' role expectations', (3) a questionnaire to measure 'pupils' perception of school environment'. The multi-stage random sampling procedure was followed in the selection of the sample of subjects. In the first stage, three out of five districts under the S.V. University area were chosen randomly. The districts selected randomly were Anantapur, Cuddapah and Nellore. Secondly, from each of the three districts four primary, six upper primary and four high schools were selected randomly. This led to the selection of a total number of 42 schools (12 primary, 18 upper primary, 12 high schools) from the three districts. As the sample of children belonged to V, VI and VII classes, V class children from primary schools, V, VI and VII class children from upper primary schools, and VI and VII class children from high schools formed the sample. The sample comprised 1200 children selected randomly, representing the three classes, both sexes and also rural and urban areas. The data collection programme was carried out on the basis of the above sampling procedure. All the data gathering instruments were administered to the sample at the end of the academic year, as the achievement tests for these classes were intended to be administered only during that part of the year.

The main findings of the study were: 1. The three levels of school environment, viz., low perception, moderate perception and high perception indicated 43.74 per cent, 47.72 per cent and 51.61 per cent of mean academic achievements respectively. The results of F-test revealed that the mean differences were found significant at 0.01 level. However, Kramer's test showed that only the high group differed significantly from the middle and low groups. The zero-order correlations between pupils' perception of school environment and academic achievement yielded a positive correlation 0.184 on the whole sample and 0.26 on the sub-sample and they were significant at 0.01 level. The relationship between the two variables for boys (0.154) and girls (0.232) separately also produced positive and signifi-

cant correlations. The partial correlations between the two variables when the other independent factors were held constant, were not significant on the whole sample and on the sub-sample. Inter-correlations among the independent factors indicated that school environment had a positive and significant relationship with socio-economic status, academic motivation, role expectations and home environment. However, all the correlations were low except with role expectations. School environment and intelligence were not found to have a significant relationship. 2. On the basis of the congruence between pupil's and teacher's expectations on the 'ideal pupil's role', it was categorized in three levels—incongruent, moderately congruent and congruent. The mean academic achievements of the three groups were found to be 42.51, 46.23 and 55.6 respectively. The mean differences were found highly significant, beyond the 0.01 level. But the means between moderate and incongruent groups did not differ significantly. The simple correlations between the role expectations and academic achievement were found to be 0.309 for the whole sample and 0.422 for the sub-sample. The 'r' values for boys and girls were 0.285 and 0.351 respectively. All the correlations were found significant beyond the 0.01 level. On the sub-sample, for boys and girls separately, the correlations were also found positive and significant. The partial correlations between these two factors, when the effects of other independent variables were nullified, on the whole sample and sub-sample were also found significant at 1 per cent and 5 per cent levels respectively. Inter-correlations among the independent socio-psychological factors revealed that, role expectations commanded moderate, positive and significant relationship with all the other independent factors. But its relationship with socio-economic status and school environment yielded a low relationship. From the above results it was inferred that pupils' role expectations had a profound influence on academic achievement. 3. The three levels of home environment, low, middle and high, obtained 41.38, 47.05 and 62.37 of mean academic achievement respectively. Statistically the differences between the means yielded a significant effect of home environment on academic achievement ($F = 17.23$ at 0.01 level). Kramer's test revealed that the differences between the high and middle, the high and low were significant at 0.01 level. Home environment yielded a correlation of 0.42 with academic achievement and was found highly significant. The partial correlation between home environment and achievement was found to be 0.179, which was also sig-

nificant. For boys and girls the respective correlations were 0.391 and 0.450, which were positive and significant. The inter-correlations between socio-psychological variables showed that, home environment had a positive and significant correlation with other independent factors. The relationship of home environment with socio-economic status and school environment was significant at 5 per cent. It had the highest degree of association with pupils' role expectations. In the relationship with academic achievement, home environment occupied the third place after intelligence and academic motivation. 4. With the five independent predictors, viz., socio-economic status, school environment, role expectation, academic motivation and intelligence on the whole sample the multiple correlation yielded a value of 0.524. This value indicated that the strength of the relationship between academic achievement (dependent) and the above independent variables combined with optimal weights was 0.53. The proportion of variance explained by all the five variables in academic achievement was 0.275 (27.5 per cent). Out of this variance intelligence accounted for maximum variance (12.7 per cent) followed by academic motivation (7.97 per cent), role expectations (5.25 per cent), socio-economic status (0.8 per cent), and school environment (0.7 per cent). The regression analysis indicated that 63.5 per cent variance had still to be accounted for in academic achievement by other than the variables considered here. It was observed that almost the entire variance was explained by the first three variables and the role of socio-economic status and school environment was very limited, even negligible.

937. JAHAN, Q., *A Study of Personality Profiles of Students of Science, Arts and Commerce at the Higher Secondary Level of Education in relation to Their Academic Achievement*, Ph.D. Edu., AMU, 1985

The objective of the study was to compare the personality profiles of over and underachieving students studying in science, arts and commerce streams in preuniversity classes.

The sample comprised 758 male and female students. Cattell's High School Personality Questionnaire (HSPQ) and a composite of marks obtained in different subjects of science, arts and commerce streams served as measures of personality and academic achievement respectively. Thorndike's method of identifying over- and under-achievers on the basis of discrepancies be-

tween actual achievement and that predicted on the basis of intelligence was employed. The significance of difference between the means of scores on the fourteen dimensions of HSPQ secured by the over and underachievers of the three streams was ascertained by t-test.

The major findings were: 1. The overachievers of science stream were more reserved, intelligent emotionally stable, excitable, obedient, sober, conscientious, shy, self-assured, self-sufficient, controlled and relaxed as compared to the underachievers. 2. The overachievers of the arts stream were more warm-hearted, intelligent, affected by feelings, undemonstrative, assertive, enthusiastic, conscientious, zestful, apprehensive and tense as compared to underachievers. 3. The over-achievers of the commerce stream were more reserved, intelligent, affected by feelings, sober, conscientious and self-assured as compared to the underachievers.

938. JASUJA, S.K., *A Study of Frustration Level of Aspiration and Academic Achievement in relation to Age, Educational and Sex Differences among Adolescents*, Ph.D. Psy., Agra U., 1983

The hypotheses were: (1) Frustration is not related to academic achievement. (2) Sex differences are not relevant to achievement and frustration. (3) Aspiration and frustration are not related. (4) There is no effect of age on the level of aspiration. (5) There are no sex differences in the level of aspiration.

The sample comprised 500 subjects (250 males and 250 females). They belonged to different classes and ages. The Frustration Test developed by N.S. Chauhan and G.P. Tiwari was used to measure frustration. Its test-retest reliability ranged from 0.78 to 0.92. The Level of Aspiration Test developed by M.A. Shah and M. Bhargava was used. The data were analysed with the help of t-test and correlation techniques.

The findings were: 1. Frustration and academic achievement were negatively and significantly related. 2. Girls achieved higher in the academic field and were less frustrated as compared to boys. 3. Frustration and level of aspiration were positively related. 4. Level of aspiration and frustration did affect the achievement. 5. Both age and sex, separately, influenced significantly the level of aspiration.

939. KAMALANABHAN, T.J., *Efficacy of a Behavioural Programme for Personality Change and Improvement in Academic Performance of School Students*, Ph.D. Psy., Madras U., 1987

The main objective of the study was to find out the efficacy of a multifaceted behavioural training programme in changing the personality and improving the academic performance of students. The behavioural training consisted of relaxation, and 'assertive and study skill training'.

Cattell's Jr. Sr. High School Personality Questionnaire, Raven's Standard Progressive Matrices, Paramesh's Test of Creativity and Weschler's Memory Scale were used to collect the relevant data. Examination marks were used to measure academic performance. The pre-test post-test equivalent group design was adopted. Students from one school studying in standard VI to X were involved in the study. There were 54 boys and 20 girls in the experimental group and 54 boys and 15 girls in the control group. The treatment lasted for a period of ten weeks. The effectiveness was measured using gain scores.

The main findings were: 1. Boys in the experimental group showed changes in factors E, O and Q4. They became more assertive and dominant (E), relaxed (Q4), cheerful and self-assured (O). In the control group, there was no change in personality traits. 2. Girls in the experimental group became more assertive and dominant (E), and relaxed (Q4). In the control group girls became more serious and sober (E). 3. There was significant increase in achievement in boys and girls in the experimental group. In the control group boys and girls did not improve in their achievement.

940. KAMLESH, M.L., *A Comparative Study of High and Low Performance on some selected Variables of Personality*, Ph.D. Phy. Edu., Punjabi U., 1982

The major objective of the study was to find out personality differences among high and low achievers among athletes participating in track and field events in India. In order to achieve this objective the hypotheses framed were: (1) High performing athletes and low performing athletes do not differ in

intelligence. (2) High performing athletes score higher on divergent thinking than the low performing athletes. (3) High performing athletes and low performing athletes do not differ on dominant and related personality traits. (4) High performing athletes score less than the low performing athletes on neuroticism. (5) High performing athletes are more ascendant than low performing athletes.

The study was conducted on 191 athletes (95 males and 96 females) who took part in the All-India Inter-University Athletic Meet held at Laxmibai College of Physical Education, Gwalior. These athletes were divided into low performers and high performers on the basis of their achievement in athletics. They were administered Raven's Standard Progressive Matrices, the Torrance Test of Creative Thinking, Eysenck Personality Inventory, Dutt A-S Reaction Test and the Anxiety Scale. The data were treated to find out the significance of difference between the means. The study was made on a cross-sectional basis. The high performance group was compared with the low performance group on inter-event and intra-event, inter-sex and intra-sex basis.

The findings of the study were: 1. No significant difference was found between the high and low performers in athletics on the variable of intelligence. Neither high performing males nor high performing female athletes differed from the low performing male and female athletes in intelligence. Significant difference in intelligence was found only between the high and low male long-jumpers. Similarly there was significant difference between high and low male high-jumpers. 2. In all cases, the athletes scored much less on the intelligence test when compared to the general population. 3. Sprinters, long distance runners, long-jumpers, high-jumpers, javelin throwers, discus throwers, and shot-putters having high performance in their respective field events possessed average intelligence when compared to the norms given in the manual of Raven's Progressive Matrices. 4. There was no significant difference among high performers and low performers on the creativity test but females in comparison to males were more creative. 5. The low performers (both male and female) in athletic events of sprinters, long and middle distance races, long jump and discus throw, had an edge over the high performers (both sexes) in creativity, although the difference between the high performers and low performers was not significant. 6. All groups of athletes showed higher anxiety in comparison to the normal population. 7. There was no significant difference between men and women athletes on the scores of anxiety.

8. There was no significant difference between the high and low performing athletes in respect of extraversion-introversion. 9. All the groups of athletes had shown higher mean scores on the variable of neuroticism when compared to the mean scores of the normal population. 10. High and low performing athletes did not differ from each other on the levels of neuroticism. 11. Women athletes in almost all the event-groups had shown themselves to be less neurotic than the men athletes. 12. High and low performing athletes—both male and female—did not differ from each other on the levels of ascendance. In general, it was found that men athletes were more ascendant than the women athletes (from all the events).

*941. KAPOOR, RITA, *Study of Factors Responsible for High and Low Achievement at the Junior High School Level*, Ph.D. Edu., Avadh U., 1987

The objective of the study was to find out the factors related to high and low academic achievement at the Junior High School level.

The sample of the study selected randomly from class VIII of recognized and aided Junior High Schools of Lucknow, consisted of 1396 students (696 boys and 700 girls) of age range 13 to 14 years. The tools of the study were: (1) Raven's Progressive Matrices Test (1985 Revision); (2) Dr S.P. Kulshreshtha's Socio-Economic Status Scale; (3) Dr V.K. Mittal's Adjustment Inventory; and (4) Dr B.V. Patel's Study-Habit Inventory. Besides these tools, marks in the Junior High School Examination were taken as the criterion of academic achievement and the students were divided into high achievers (those getting 60 per cent and above), average achievers (those getting 34 per cent to 59 per cent) and low achievers (those getting 33 per cent or less) categories. Data were tabulated and analyzed using suitable statistical techniques.

The findings of the study were: 1. Among both the boys and girls the high achievers tended to show a higher level of intelligence as compared to the average and the low achievers. 2. A majority of the high achievers belonged to higher SES groups and a large number of low achievers belonged to the lower SES groups. 3. The high achievers had better home, health, social, emotional and school adjustment. The overall adjustment scores of high achievers were also significantly higher than the overall adjustment scores of the other two groups. 4. Among boys and girls, the high achievers had

better study habits as compared to the average and the low achievers. The high achievers tended to plan their studies properly, had proper reading habits, could concentrate on their studies, and prepared for the examination in a better planned manner.

942. KHANAM, R., *Performance of High School Students in Biology as a Function of Personality Types and Instructional Designs for Concept and Rule Learning*, Ph.D. Edu., Pan U., 1983

The objectives of the study were (i) to study the effect of the three instructional designs, namely (a) programmed instruction, (b) structural communication, and (c) teacher-directed structured instruction on students performance in biology, (ii) to study the effect of instructional designs on performance of students of different personality groups, (iii) to study the effect of instructional designs on performance for concept and rule learning, (iv) to study the effect of instructional designs at three levels of educational objectives—knowledge, understanding and higher order understanding, (v) to study the effect of instructional designs on performance of four personality groups for concept and rule learning, and (vi) to study the effect of instructional designs on performance of the four personality groups at knowledge, understanding and higher order understanding levels.

A group of 510 students was selected from high school students (IX and X classes) on the basis of their scores on a Scientific Knowledge and Aptitude Test. These students were further categorized on the basis of personality types. In the study, two separate designs were followed with the same sample—one involving $3 \times 4 \times 2$ design and the other $3 \times 4 \times 3$ factorial design. In case of the $3 \times 4 \times 2$ factorial design, the first variable—instructional design—was studied at three levels namely, mixed programme (MP), structured communication (SC), and teacher-directed structured lesson (SL); the second variable, that is, personality types, was studied at four levels, viz., extraverts, introverts, high on neuroticism and low on neuroticism; the third variable, i.e. type of learning, was studied at two levels namely concept learning and rule learning. The $3 \times 4 \times 3$ factorial design involved three fixed variables, namely instructional design, personality types and levels of educational objectives formulated after Bloom's classification. The first two variables were similar to $3 \times 4 \times 2$ design but in the third variable (levels of educa-

tional objectives) the measures were repeated at three levels—knowledge, understanding and higher order understanding. The tools used for collection of data were the Chatterji and Mukerjee Scientific Knowledge and Aptitude Test Form 1064. The Mohan *et al.* (1968) Junior Personality Inventory, three types of instructional materials (mixed programmed text, structured communication unit, and structured lesson), the test of entering behaviour, the criterion test, and the achievement test.

The findings of the study were: 1. The mixed programme was found less effective than the teacher-directed structured lesson as far as gain scores of students were concerned. Structured communication neither differed from the mixed programme nor from teacher-directed structured lesson. 2. The extraverts, introverts, high on neuroticism and low on neuroticism groups did not differ in their mean gain performance. 3. The mean gain scores on concept learning exceeded the mean gain scores on rules. 4. The mixed programme and teacher-directed structured lessons were found equally effective for both extraverts, and introverts as well as groups high on neuroticism and low on neuroticism. 5. Through structured communication, the extravert group was found to benefit more than the introvert group. 6. High on neuroticism and low on neuroticism groups were found to have been equally benefited from all the three instructional designs. 7. Subjects taught through the mixed programme attained the highest mean gain performance at knowledge level and lowest at higher order understanding level. 8. For knowledge, the mixed programme and teacher-directed structured lessons were superior to structured communication. For understanding, structured communication was more effective than teacher-directed structured lessons. 9. For higher order understanding, structured communication and teacher-directed structured lessons were found uniformly more effective than the mixed programme. 10. The gain in performance at different levels of educational objectives was independent of type of personality. 11. Through mixed programme, extraverts scored highest at knowledge level and lowest at higher order understanding level. 12. Through the mixed programme, introverts did not differ in their performance at knowledge, understanding and higher order understanding level. 13. The two types of learning, viz., concept and rule learning, were uniformly affected by the three instructional designs. 14. The four personality types benefited uniformly in concept and rule learning. 15. The interaction between variables of personality type and types of learning was independent of the types

of instructional design. 16. The performance at knowledge and understanding levels was found superior to that at higher order understanding level. 17. For low neuroticism group, the mixed programme was found highly effective at knowledge level and least effective at higher order understanding level. 18. For extraverts, structured communication was more effective for understanding level than for the knowledge and higher order understanding levels. 19. For the high neuroticism group, structured communication was considered more effective at the understanding level. 20. For the low neuroticism group, structured communication was more effective at the understanding level. 21. For high and low neuroticism groups teacher-directed structured lessons were more effective for knowledge and understanding.

943. KUMAR, AWADHESH, *A Study of Ego-involvement, Level of Aspiration and Associated Factors in relation to Achievement at Graduation Level*, Ph.D. Edu., Gor. U., 1986

The objectives were (i) to study B.A. and B.Sc. students in the context of ego-involvement, level of aspiration, intelligence, and socio-economic status and final examination scores, (ii) to compare the students of three groups (arts, biology, mathematics) on four variables (ego-involvement, level of aspiration, intelligence and socio-economic conditions), (iii) to determine the degree of relationship between ego-involvement and other variables, and (iv) to assess the amount of contribution made by ego-involvement, level of aspiration and other variables to the academic attainment of the students.

The sample comprised 730 students (280 arts, 250 biology, and 200 mathematics) from nine districts of East UP. Tools used were Joshi's Test of General Mental Ability, the Test on Level of Aspiration by Bhargava, the Ego-involvement Questionnaire prepared by the investigator and a socio-economic status questionnaire. The obtained data were analysed with the help of mean, percentile, critical ratio, linear correlation and multiple correlation coefficients and regression coefficients.

The major conclusions were: 1. Most of the undergraduate students showed academic attainment of an average level. 2. No significant difference in the average achievement of boys and girls belonging to arts and biology groups was observed. They appeared to be scoring similar marks at graduation level. 3. Science students had high ego-involvement whereas boys and girls of the

arts group had comparatively low ego-involvement. 4. Mathematics boys showed higher aspiration in comparison on arts students. 5. Biology and mathematics boys scored more on the intelligence test than other groups. 6. Girls belonging to the biology and arts groups appeared to have better socio-economic background. 7. The correlation between the B.A./B.Sc. examination scores and the four correlates was found to be positive. 8. The regression coefficients revealed that ego-involvement and intelligence made a remarkable contribution to the success of the boys and girls at the graduation examination.

944. KUMARI, K., *An Experimental Study of Interaction Effects of Deductive, Inductive Strategies, Creativity and Learning Objectives on Achievement*, Ph.D. Edu., Mee. U., 1985

The objectives of the study were (i) to analyse the effectiveness of inductive and deductive strategies, (ii) to evaluate the interaction effects of deductive, inductive strategies and creativity on achievement, (iii) to study the interaction effects of deductive, inductive strategies and learning objectives on achievement, (iv) to investigate the interaction effects of creativity and learning objectives on achievement, and (v) to analyse the interaction effect of deductive, inductive strategies, creativity and learning objectives on achievement.

The sample was selected by the stratified sampling technique. Baqer Mehdi's Test of Creative Thinking Ability was administered to class XI students of four selected institutions. The high creatives and low creatives were selected by using 25 per cent top and 25 per cent bottom groups. In all, 75 high creatives and 75 low creatives were obtained in both the boys' and girls' groups separately. The factorial design was employed. The independent variables were instructional strategies (deductive, inductive and combined), creativity (high and low), sex (boys and girls), taxonomic categories (knowledge and comprehension). Achievement was the dependent variable. A criterion test developed by M.N. Verma was used for evaluating the performance of students. The data were analysed by using analysis of variance followed by t-test.

The findings were: 1. Inductive and deductive strategies were equally effective with regard to students' achievement. 2. The combined strategy was more effective than inductive and deductive strategies taken separately. 3. Creativity and sex factors did not have an in-

teraction effect on achievement. 4. The strategies of instruction, creativity and sex factors did not have any interaction effect on achievement of students. 5. The instructional strategies were more effective at knowledge level than at comprehension level of achievement. 6. The combined and inductive strategies did not interact with taxonomic categories with regard to achievement of students. 7. High creatives' performance was higher than that of low creatives. 8. The performance of high creatives was greater through inductive strategy and that of low creatives through a combined strategy. 9. Combined and deductive strategies were equally effective for both high and low creatives. 10. The deductive strategy was more effective at knowledge level than the combined strategy. 11. The combined strategy was more effective at comprehension level than the deductive strategy. 12. The deductive strategy was more effective at knowledge level than the inductive strategy. 13. The inductive strategy was more effective at comprehension level than the deductive strategy. 14. The high creatives and low creatives had greater attainment at knowledge level than at comprehension level. 15. The achievement of high creative students was higher than that of low creative students at knowledge and comprehension levels. 16. There was no significant interaction effect among strategies of instruction, creativity and taxonomic categories with regard to achievement of students.

*945. KUMARI, N., *A Study of Relationship Between Socio-Economic Status and Conservation of Number and Substance in Delhi School Children*, Ph.D. Edu., Del. U., 1983

The objectives of the study were (i) to see the relationship between intelligence and conservation of substance, (ii) to see the relationship between intelligence and conservation of number, (iii) to see the relationship between conservation of substance and conservation of number, and (iv) to see the relationship between socio-economic status and intelligence.

The sample of the study consisted of 300 children selected randomly from 20 schools of South Delhi. These children were administered the following tools: (1) The Kulshreshtha Socio-Economic Scale, (ii) Raven's Coloured Progressive Matrices, (iii) a tool to assess the level of development of conservation of numbers, (iv) a tool to assess the level of conservation of substance. The data so collected were analysed with the help of the

product-moment correlation, multiple correlation and linear correlation.

The findings of the study were: 1. Socio-economic status was highly and positively related with the manifestation of conservation of number. 2. Socio-economic status was highly and positively related with manifestation of conservation of substance. 3. Conservation of substance and conservation of number were highly correlated. A good conserver of substance was very likely to be a good conserver of number giving a coefficient of correlation of 0.998. 4. Intelligence was positively related to the level of development of conservation of substance (equality and inequality). One who was high in intelligence was likely to be a good conserver of substance. 5. Intelligence was positively correlated with conservation of number. One who was high in intelligence was likely to be a good conserver of number.

*946. KUPPUSWAMY, A., *A Comparative Study of the Performance of Day Scholars and Hostellers in the Technical Board Examination*, TTTI, Madras, 1986

The major objective of the study was to see the effect of hostel life as compared to home life on academic performance of students. In this connection, the performance of day scholars and hostellers was compared in respect of (i) their mean scores in the achievement test, (ii) the proportion of successful students in the first year board examination, (iii) the effect of environment on their performance, (iv) the community of successful students, and (v) the relationship between their SSLC total marks and achievement.

The polytechnics in and around Coimbatore were taken and a sample of 207 students chosen randomly from four polytechnics was considered. This consisted of 105 day scholars and 102 hostellers. They were administered a questionnaire and all the pertinent data were gathered. The sample had 134 boys and 73 girls.

The findings were: 1. Hostellers performed slightly better in the achievement test conducted although the difference between their performance and that of day scholars was not significant. 2. Day scholars belonging to the backward communities fared better than hostellers of the same community. Also scheduled caste and forward community students seemed to do better when they stayed in the hostels. 3. Hostellers whose parental monthly income was less than Rs. 500/- seemed to fare better than the day scholars. 4. The correlation

coefficient between SSLC total scores and achievement score was positive and moderate. 5. Day scholars fared better than hostellers in the first year board examination irrespective of their sex.

*947. KURAI SHY, S., *A Study of the Relationship between Art Education and Achievement in other School Subjects at the Secondary School Stage*, Ph.D. Edu., AMU, 1986

The objectives of the study were to compare the academic achievement of secondary students (i) who had offered and who had not offered art as a school subject, (ii) who came from families with rich and ordinary cultural backgrounds, and (iii) who possessed and did not possess an aptitude for art.

A representative sample of 465 students (195 boys and 270 girls) studying in class IX of secondary schools of three fairly large cities of Uttar Pradesh was divided into an Art Group (AG) and a Non-Art Group (NAG). The tools used were (i) a measure of Home Background which consisted of (a) two questionnaires constructed by the investigator, one for AG and the other for NAG for eliciting the experiences of art activities the students were exposed to at home and in schools, and (b) Socio-Economic Status Scale developed by Kuppaswamy, (ii) a measure of art aptitude—Torrance Test of Creative Thinking Form A entitled Thinking Creatively with Figures, and, (iii) a measure of school types. Mohsin's General Intelligence Test was employed to match the different groups who took the different tests. It was administered to a representative sample of 20 students of each school. Marks obtained by the students at the annual examination of class IX constituted the criterion measure. Coefficients of correlation and multiple correlation were employed to study the relationship between different variables.

The major findings of the study were: 1. The coefficient of multiple correlation 'R' was significant for the AG and insignificant for the NAG. The students who had received formal training in art achieved more than those who had not received such training. 2. The coefficient of correlation obtained between home background and academic achievement was significant for all the groups, showing thereby that socio-economic status and experience of art activities were positively and significantly related to over-all academic achievement. 3. The relationship between art aptitude and academic achievement was positive and significant for most of

the groups. 4. A comparison of the academic achievement of boys and girls of the AG and NAG revealed that there was no difference between boys and girls for the AG, but for the NAG these differences were significant. 5. The coefficient of partial correlation was computed to find the relationship between the integration of art with other subjects and academic achievement when the variables of home background and art aptitude were held constant. It was found that there was no difference between the performance of the two groups (AG and NAG).

948. LALL, R., *Child Rearing Attitudes, Personal Problems and Personality Factors as Correlates of Academic Achievement*, Ph.D. Psy., Bhagalpur U., 1984

The main purpose of the study was (i) to investigate the relationship among child-rearing attitudes of parents (termed as parental attitude), youth problems and personality factors such as locus of control, reinforcement, anxiety, extraversion and neuroticism, and (ii) to study their relation with academic achievement (termed as academic success). Fourteen hypotheses were examined.

A random sample of 400 class IX and X students (200 boys and 200 girls) was selected from two high schools of Bhagalpur City. Singh's Parental Attitude Scale, Verma's Youth Problem Inventory, Levenson's Locus of Control Scale, Sinha's M.A. Self Analysis Form, and Eysenck's Personality Inventory were used. Academic success was determined by marks obtained by students in the annual examination. Correlational analysis, t-test, etc. were employed.

The major findings were 1. Restrictive and protecting attitudes of parents were positively and significantly related to youth problems and anxiety. 2. Restrictive attitudes of parents were negatively and significantly related to internal locus of control and extraversion, whereas they were positively and significantly related with powerful-others, locus of control and neuroticism. Protecting attitudes of parents were positively and significantly related to academic success of boys. 3. Loving attitudes of parents were positively and significantly related to powerful-others, locus of control, extraversion and neuroticism. 4. Academic success was negatively and significantly related to personal problems and sensitivity, anxiety and neuroticism. Internal, powerful-others and locus of control of reinforcement were not

significantly related to academic success. 5. Boys were more internally oriented and neurotic than girls, while girls were subjected to more restriction by parents and were more anxious than boys.

The major educational implication of the study is that it is helpful to teachers and others in understanding the problems of adolescent students, their personality and perception of parent child-rearing attitude.

*949. LYGDOH, M.Q., *A Study of Perceptual Consonance/Dissonance and Pupils' Motivation towards School in relation to Performance*, Ph.D. Edu., MSU, 1986

The major objectives of the inquiry were (i) to study the perceptual world of pupils as perceived by the teachers, (ii) to study the inter-relationship of the components of the major variables such as motivation, task orientation, etc., (iii) to know the pupils' academic and non-academic performance as perceived by the teacher, (iv) to find out the pupils' academic motivation towards school, (v) to find out the pupils' perceptual consonance and dissonance with regard to their own self and teachers' Perception of the pupils, and (vi) to know the difference in pupils perceptual consonance/dissonance according to the schools.

The sample of the study consisted of 200 pupils of class X of six high schools of Shillong City. From these 200 pupils again, sixteen were selected for conducting case studies. The data were collected by the investigator personally from the schools. Information was obtained with the help of different tools, viz., Self-Perception Inquiry (Who am I?), Pupils' Self-Concept Scale, Teacher's Perception of the Pupils, Pupils' Academic Motivation Scale, and Interview Schedules for case studies. Obtained information was analysed by computing mean, standard deviation, correlations and regression.

The major findings of the study were: 1. The mean of pupils' self-concept on the component of motivation and task orientation was higher than what was perceived by the teachers whereas in the case of problem solving positive it was same and in case of problem solving negative and in class membership it was less. 2. The mean score of the academic motivation components—belongingness, positive attitude, optimism and flexibility—was higher than alienation, negative attitude, pessimism and dogmatism respectively. 3. The total mean score of the pupils' real-self positive was

higher than the total mean score of real-self negative. 4. A negative significant relationship was found between the components of pupils' self-concept, viz., motivation positive and motivation negative, task orientation positive and task orientation negative, and problem solving positive and problem solving negative whereas the relationship between task orientation negative and problem solving positive, problem solving negative and classroom membership, and class membership negative and total score of self-concept positive was found to be significantly positive. 5. A significant positive relationship was found between actual performance of the pupils and the total score of pupils' self-concept positive, and teacher perception for pupil positive and teacher perception for pupil negative whereas the relationship between actual performance of pupils and total score of pupils' self-concept negative was found to be significantly negative. 6. Highly positive significant relationship was found between the pupils' academic performance evaluated by the teacher and teacher perception for pupils' positive and total score of academic motivation negative. A highly positive significant relationship was found between non-academic performance of the pupils evaluated by the teacher and pupils' self-concept negative, teacher perception for pupils' positive, teacher perception for pupils' negative and total of JIM.

950. MAITRA, K., *Affective Correlates of the Gifted Underachievers*, Ph.D. Edu., Del. U., 1985

The objectives of the study were (i) to locate the gifted underachievers in some schools in Delhi, (ii) to prepare tools to measure certain variables pertaining to the affective domain of the gifted students, (iii) to measure the status of the gifted under and overachieving students on a few variables in the affective domain, (iv) to find out the relationship between achievement and the variables in the affective domain of the gifted under and overachievers, and (v) to prepare selected case studies of gifted under and overachievers.

The sample of the study consisted of 1020 students comprising both gifted overachievers and underachievers (UA). All the students were from class VII. The tools used in the study were: (i) Raven's Progressive Matrices Test, (ii) Lipsitt's (1958) Self-Concept Scale, (iii) the Self-Perception Inventory by William Martin (1972), (iv) the Self-Esteem Inventory (SEI) by Coopersmith (1967), (v) the Academic Self-Image Scale by Joan

Barkar-Lunn (1970), and (vi) the N-achievement Test by MecLelland (1953). Apart from this, seven case studies for each category of underachievers and overachievers were done to know the physical set-up of home, emotional climate, education, health, physical aspect of development, emotional aspect of development, social aspect of development and intellectual aspect of development of the underachievers and overachievers.

The findings of the study were: 1. Academic underachievement was a phenomenon which frustrated the teachers sometimes but rarely the parents. The parents of the underachievers were seldom aware of the fact that their children were performing below their expected level of performance. 2. The gifted underachievers' home environment was the most important affective variable affecting under-achievement as compared to other variables considered in the study. 3. On several fronts, underachievers' reactions were not very much different from that of gifted overachievers. But the gifted underachievers revealed quite a different angularity for their attachment to the school. 4. The gifted overachievers were seen to be much more conformist than the gifted underachievers. The gifted underachievers, in general, were quite aware of the shortcomings of their schools but at the same time they wanted to come to the school. To them, these were the places where they could get substitute figures for their emotional belongingness and attachment through their peers or one or two effective teachers. 5. The gifted underachievers relied more on luck or fate as compared to the gifted overachievers. They sometimes did think that they could do many a thing but, for some reason or other, they did not. 6. As a group the gifted underachievers did lack interest in studies and in extra reading. It was revealed from the case study that they were interested more in mechanical work. 7. The underachievement seemed to be independent of the physical set-up of the home or of socio-economic status of the parents, but depended more on parents' educational status in the form of their involvement in the child's activities and educational guidance. 8. The girl underachievers were found to be more shy and less talkative than the boy underachievers, although they did not show any statistical difference on any of the affective variables. 9. Some of the gifted underachievers expressed their boredom in classrooms because of stereotyped school curriculum. They avoided involvement in the classroom procedure which was reflected in their indifferent attitude towards the quality of teaching, types of teachers or teaching strategies. 10. The gifted students, at least some of them, were quite

critical about different school policies. They felt bored with the stereotyped curriculum and traditional method of teaching. They expressed their liking for discussion methods and reasoning in the teaching of a subject. 11. The stories of the gifted underachievers written in TAT cards expressed their negative view of life in general. They seemed to be less optimistic and more dependent on luck or fate. 12. The overachievers were found to be of good health, had manifold interests and good reading habits. They were found to be quite popular among their friends and were assessed by their friends as highly intelligent whereas for the gifted underachievers this was not true. In general, the underachievers were assessed by their friends as less intelligent. 13. The gifted overachieving boys showed a higher score on achievement motivation than the gifted overachieving girls.

951. MALIK, G.M., *A Comparative Study of First Generation Learners with Others Belonging to the Same Socio-Economic Status in the Kashmir Valley in Respect of Their Academic Achievement and Adjustment*, Ph.D. Edu., JMI, 1984

The objectives of the study were (i) to find out the difference in academic achievement of first generation learners (FGLs) and non-first generation learners (NFGLs) in respect of rural boys, rural girls, urban boys and urban girls, and (ii) to find out the difference in adjustment of FGLs and NFGLs. The following hypotheses were formulated for the study: (1) There is no significant difference in the academic achievement of FGLs and NFGLs. (2) Adjustment is independent of learners being FGLs or NFGLs.

The following tools were used in the study: (i) Raven's Progressive Matrices, (ii) S.N. Rao's Socio-Economic Rating Scale, (iii) Bell's Adjustment Inventory, (iv) Matriculation examination results as the index of achievement, and (v) A questionnaire constructed by the investigator to classify the sample as first generation learners and non-first generation learners, urban and rural, etc. The sample for the study consisted of 150 urban boys, 140 rural boys, 140 urban girls, and 100 rural girls equated on socio-economic status and intelligence. Chi-square test and t-test were used to draw conclusions.

The major findings of the study were: 1. The FGLs had significantly lower academic achievement than the NFGLs. 2. There was no significant difference in the

home adjustment of FGLs (rural boys and girls, urban girls) and NFGLs. But NFGLs (urban boys) were better on home adjustment than FGLs. 3. Health adjustment of students (rural boys and girls, urban boys and girls) was independent of the fact that one group had NFGLs and the other FGLs. 4. Social adjustment of students (rural boys and girls, urban girls) was independent of the fact that one group had FGLs and the other NFGLs. But NFGLs (urban boys) were better on social adjustment than FGLs. 5. Emotional adjustment of students (rural boys and girls) was independent of the fact that one group consisted of FGLs and the other of NFGLs. But there was a significant difference in emotional adjustment of FGLs and NFGLs (urban boys and girls).

952. MEHROTRA, S., *A Study of the Relationship between Intelligence, Socio-economic Status, Anxiety, Personality Adjustment and Academic Achievement of High School Students*, Ph.D., Edu., Kan. U., 1986

The investigation was designed to study the relationship between intelligence, socio-economic status of the family, personality adjustment, anxiety and academic achievement of high school students.

The sample for the study consisted of 535 class X students. Around 260 of them were boys and 275 girls. Jalota's Group General Mental Ability Test was used for measurement of intelligence. Kuppuswamy's Socio-economic Status Scale was used for assessment of socio-economic status of the families of the students. Saxena's Adjustment Inventory was administered for assessment of the personality adjustment in five areas, viz., home, health, social, emotional and school adjustment. Kumar's Indian adaptation of Sarason's General Anxiety Scale was used for measurement of anxiety. Marks in the high school examination were taken as the criterion of academic achievement.

The main findings of the study were: 1. Both for the boys and the girls there was an inverse relationship between level of anxiety and academic achievement. 2. Both for the boys and the girls there was a positive relationship between socio-economic status of the family of the students and academic achievement. 3. There was a positive relationship between intelligence and academic achievement. 4. There was a positive relationship between level of adjustment and academic achievement. 5. In general, the girls had a comparatively higher level of anxiety than the boys.

- *953. MEHTA, C.P., *An Investigation into the Effect of Some Psychological Factors on School Achievement of Scheduled Caste and Scheduled Tribe Students and the Students as Identified by the Baxi Commission in Saurashtra*, Ph.D. Edu., SPU, 1987

The objectives of the study were (i) to examine the effect of achievement motivation on school achievement of scheduled castes (SC), scheduled tribes (ST), and backward class students as identified by the Baxi Commission (BC), (ii) to study the effect of attitudes towards teachers and parents on school achievement of SC, ST and backward class students, (iii) to study the effect of attitude towards discipline on school achievement of SC, ST and backward class students, (iv) to study the effect of adjustment on school achievement of SC, ST and backward class students, (v) to study the interactive effect of achievement motivation, attitude towards teachers and parents and attitude towards discipline, and (vi) to study the components of variances attributable to the criterion variables.

For measuring achievement motivation, Prayag Mehta's TAT Picture Test was used. The reliability of scoring was established and it was 0.89. For measuring attitude towards teachers and parents and towards discipline, Sodhi's Attitude Scale was used. The reliability of the scale was 0.78 by the test-retest method and its validity was 0.61. The Adjustment Inventory by Sinha was used to measure students' adjustment. The reliability of the inventory was 0.73 and its validity was 0.62. For school achievement the marks obtained by students at SSC examination were used and converted into percentage. The $2 \times 2 \times 2 \times 3$ factorial design was used for the study and the analysis of variance technique was used for testing the hypotheses.

The major findings were: 1. The students of the backward castes as identified by the Baxi Commission were the best achievers in comparison with the other two castes when the independent variable was attitude towards teachers and parents. 2. The SC students were found the best achievers in comparison with the other two castes when one of the independent variables was attitude towards discipline. 3. The students who had high achievement motivation achieved higher school achievement when one of the independent variables was attitude towards parents and teachers. 4. Similarly, the students having high achievement motivation achieved high in school achievement and when one of the independent variables was attitude towards disci-

pline. 5. There was no difference in the school achievement of pupils having high and low levels of attitude towards teachers and parents, while differences were found in school achievement of pupils having high and low levels of attitude towards discipline. 6. There was no difference in school achievement of the pupils having high and low levels of adjustment when one of the independent variables was attitude towards parents and teachers. The differences were found in the school achievement of the pupils having high and low levels of adjustment when one of the independent variables was attitude towards discipline and it was in favour of high adjustment. 7. Not a single interaction was significant when one of the independent variables was attitude towards parents and teachers. Four interactions were significant when one of the independent variables was attitude towards discipline. When the variables (i) achievement motivation, (ii) caste, (iii) adjustment, and (iv) achievement motivation and caste were joined with the variable attitude towards discipline, they influenced the school achievement of the pupils.

954. MISRA, M., *A Critical Study of the Influence of Socio-Economic Status on Academic Achievement of Higher Secondary Students in Rural and Urban Areas of Kanpur*, Ph.D. Edu., Kan. U., 1986

The investigation was designed to study the influence of socio-economic status on academic achievement of rural and urban high school students.

The sample for the study consisted of 1000 secondary school students. Of them, 500 were boys and 500 girls. Both among the boys and the girls, 300 belonged to the urban and 200 to the rural areas. The Samoohik Mansik Parikshan by Tandon was used to measure intelligence. Singh and Saxena's Socio-Economic Status Scale was used for assessment of socio-economic status of the families of the students and marks in the high school examination were taken as the criterion for academic achievement.

The main findings of the study were: 1. There was a positive relationship between socio-economic status, and academic achievement of the students. 2. There was a positive relationship between the intelligence test score and academic performance of the students. 3. Intelligence positively affected academic performance of the students. 4. The academic achievement of the rural

students was lower than the achievement of the urban students. 5. The academic performance of girls was superior to the performance of boys.

955. MITRA, R., *Some Determinants of Academic Performance in Preadolescent Children*, Ph.D. Edu., Cal. U., 1985

The objectives of the study were (i) to see the variation in academic achievement and its correlates with reference to schools. (ii) to find out sex differences with regard to academic achievement, intelligence, achievement motivation, extraversion and neuroticism, (iii) to study the relationship between intelligence, achievement motivation, extraversion and neuroticism for both sexes, and (iv) to ascertain the pattern of prediction of academic achievement from its correlates, indicating the contribution of sex.

The sample consisted of 400 students, 200 boys and 200 girls, of classes IV to VII and age 9+ to 13+. The tools used were the Group Intelligence Test in Bengali for juniors by G.B. Kapat, a questionnaire in Bengali of achievement motivation constructed and standardized by Durgadas Bhattacharya, Eysenck's Personality Inventory for Juniors adopted in Bengali by Arti Sen, and the students' annual examination marks. In the design of the study, academic achievement was the criterion variable and the predictor variables were intelligence, achievement motivation, extraversion, neuroticism and sex. The statistics used were the product-moment correlation and linear regression analysis.

The findings were: 1. Intelligence was the most significant correlate of achievement, irrespective of sex. 2. Achievement motivation and extraversion positively and significantly correlated with academic achievement for both sexes, but both lost their significant effect on academic achievement when intelligence was partialled out. 3. Students possessing relatively higher extraversion tended to achieve relatively higher, but neuroticism was not a factor that influenced achievement. 4. There were no sex differences at the pre-adolescent level with regard to intelligence, achievement motivation and extraversion, but the boys were more neurotic than the girls. 5. The prediction equation of academic achievement from its correlates accounted for three-fifths of the variance and it did not significantly vary with sexes.

*956. NAGOSE, C.K., *A Factorial Study of Divergent Abilities, Aptitudes, Level of Aspiration, and Scholastic Achievement*, Ph.D. Edu., Nag. U., 1984

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

The sample for the study consisted of 429 junior college students—153 from science stream, 159 from commerce stream and 117 from arts stream. The tools used in the study were: (i) Scale of Level of Aspiration developed by the researcher, (ii) Torrance Test of Creativity, Verbal Form (A) and (iii) University Training College Differential Scholastic Aptitude Test. The data were separately analysed for boys and girls using factor analysis and the multiple correlation technique.

The following were the findings of the study: 1. The predictive ability of the battery of nine independent variables was 0.72. 2. High scholastic achievement in the science stream was more dependent on high intellectual (aptitude) abilities. 3. Divergent thinking abilities added substantially to better scholastic achievement in the arts and commerce streams. 4. Numerical ability and inductive reasoning were important determinants among intellectual abilities for high scholastic achievement in the science stream. 5. Verbal ability and deductive reasoning were important determinants among intellectual abilities for high scholastic achievement in the arts and commerce streams. 6. Divergent thinking ability (composite) was significantly related to scholastic achievement irrespective of academic stream. 7. Originality was an important determinant among divergent thinking abilities of high scholastic achievement in science and arts streams. 8. Flexibility was an important determinant among divergent thinking abilities of high scholastic achievement in the commerce stream. 9. There was a differential pattern of variables responsible for achievement in the science, arts and commerce streams. 10. Unrealistic level of aspiration adversely affected scholastic achievement.

*957. NAGPAL, S., *A Comparative Study of the Effect of Piagetian Pattern and Advanced Curriculum Model of Cognitive Learning (ACMCL) on the Achievement of Primary Students with reference to Some of Their Personality Variables*, Ph.D., Edu., Del. U., 1983

The objectives of the inquiry were (i) to study the relative effectiveness of Piagetian, ACMCL and traditional method of teaching on development of listening comprehension and reading comprehension in terms of knowledge, understandings, application and total scores, as well as on achievement in Hindi, (ii) to study the relationship of personality factors, creativity components, SES and proximity of mother tongue to the levels of learning of listening and reading comprehension and to achievement in Hindi, (iii) to study the relationship of personality factors, creativity components, socio-economic status and proximity of mother tongue to the treatment variables, viz., Piagetian, ACMCL and the traditional method of teaching, (iv) to determine the relative contribution of treatment and concomitant variables in predicting the levels of learning in listening and reading comprehension on achievement in Hindi, (v) to verify the hierarchical and cumulative nature of the level of learning identified as knowledge, understanding and application.

The study followed a pre-test post-test experimental-control group design. A sample of 75 students of standard III belonging to the age group 8 to 10 years, of both the sexes, was selected. They were divided into three groups of 25 students each. One of the groups, designated experimental group I, was exposed to instructional material prepared according to the Piagetian method of teaching. The second group, designated experimental group II, was exposed to instructional material based on the rationale of the Advanced Curriculum Model of Cognitive Learning (ACMCL), and the third group, designated the control group, was exposed to a traditional method of teaching. All the sample subjects were pre-tested and post-tested with the help of the following tools: (i) The Achievement Test of Listening and Reading Comprehension, (ii) The Coloured Progressive Matrices, (iii) The Cattell Children Personality Questionnaire, (iv) The Torrance Creativity Test, (v) The Kuppaswamy Socio-Economic Status Scale, and (vi) A scale to measure proximity of mother tongue.

The findings of the study were: 1. All the three methods—Piagetian (PMT), ACMCL and traditional—of teaching had basically different effects on the development of listening and reading comprehension in terms of knowledge, understanding, and application. In PMT the emphasis was given to cognitive development through allied but not identical tasks. In ACMCL the target was achieved by making the task the medium. In the traditional method, cognitive development was not properly taken care of. 2. Thinking games and other developed instructional materials helped in developing the knowledge aspect of listening comprehension (KLC), the understanding aspect of listening comprehension (ULC), the application aspect of listening comprehension (ALC), the total listening comprehension (TLC), the knowledge aspect of reading comprehension (KRC), the understanding aspect of reading comprehension (URC), the total reading comprehension (TRC) and in attaining better scores on achievement in Hindi. 3. The children taught by the ACMCL method did not show significant acquisition on ULC, KRC, URC, TRC and achievement in Hindi. 4. General ability (B), emotional stability (C), surgency-desurgency (F), conscientiousness (A), confidence (O), higher strength of self-sentiment (Q_3) and low/high ergic tension (Q_4) were related to reading comprehension. 5. Factors B, C, O, G+, Q_4 + were the most persistent personality correlates of academic achievement and were also found to be related to achievement in Hindi. 6. There was strong association between content and objectives of language skills and higher mental abilities such as creativity. Not only verbal measures of creativity were related to listening comprehension and reading comprehension but even figural originality had significant relationship with ARC, ALC, URC, and ULC. 7. There were significant positive relationships between SES and listening and reading comprehension. 8. Language skills and verbal creative abilities of pupils from high SES were superior to those of pupils from low SES groups. 9. Children belonging to low SES performed poorly on tests which required language ability but in tests requiring no language ability, they seemed to do as well as the middle SES children. 10. There was a positive and significant relationship of proximity of mother tongue to the development of reading comprehension. But the case was not the same with listening comprehension and in academic achievement in Hindi. 11. Warm-hearted students preferred PMT, students having high intelligence like ACMCL and general students enjoyed the traditional method of teaching. 12. Figural creativi-

ty was related positively and significantly to the PMT. 13. There was a positive and significant relationship of verbal creativity measures with the ACMCL. 14. The traditional method promoted convergent thinking. 15. Students belonging to low SES preferred PMT and those of high SES preferred ACMCL and there was no correlation of SES to the traditional method. 16. A significant positive relationship was found between creativity and intelligence. 17. Teaching methods, personality, creativity, SES were not sufficient in predicting the variance in the listening comprehension, reading comprehension as well as achievement in Hindi. 18. Contribution of the ACMCL and PMT was the maximum towards listening comprehension rather than towards reading comprehension.

958. NAIDU, J.K., *A Comparative Study of the Academic Achievement of the Students of Formal and Non-formal Education*, Ph.D. Edu., SVU, 1986

The objectives of the study were (i) to develop common tests to assess the academic achievement of the students of formal and non-formal education, (ii) to compare the students of formal and non-formal education in respect of their academic achievement—area wise, test wise and as a whole, (iii) to find out the influence of certain socio-economic, demographic and psychological variables on the academic achievement of the students of formal and non-formal education, (iv) to study the difference of academic achievement between two identical groups from formal and non-formal students divided on the basis of socio-economic, demographic and psychological variables, and (v) to identify the factors (from among the socio-economic and psychological factors) that predicted the academic achievement of the students of formal and non-formal education.

The tools used were Telugu Test, Arithmetic Test, Problem Areas Test, Academic Achievement Motivation Inventory, Perception of School Environment Questionnaire and Home Environment Schedule. They were developed by the investigator following the standard procedures. The main sources of the data were the responses of the 300 students selected from standard V of formal schools and 300 learners selected from the fourth stage learners in non-formal education centres, to the tests, inventory, questionnaire and SES scale. Another source of data was the response of the parents of the sample of students to the home environment schedule.

The major findings of the study were: 1. There ex-

ed a significant difference in the academic achievement between the students of formal and non-formal education in the Telugu test. 2. There was a significant difference between formal and non-formal students in their academic achievement in the areas of vocabulary; reading comprehension; writing; and grammar of the Telugu test. 3. There was a significant difference in academic achievement between the students of formal and non-formal education in the arithmetic test. 4. There existed a significant difference between formal and non-formal students in their academic achievement in the areas of numeration and notation; addition; subtraction; multiplication and division; fractions; Indian money; units of length, capacity and weight; measures of time; geometry; and business mathematics of the arithmetic test. 5. The difference between academic achievement of the formal and non-formal groups in the problem areas test was significant. 6. There was a significant difference between formal and non-formal students in their academic achievement in the areas of food and water; clothing and housing; health and hygiene; plants and animals; solar system; transport and communication; national natural resources; society and nationalism of the problem areas test.

- *959. NARANG, M., *An Interaction Effect of Three Instructional Strategies, Extraversion and Learning Objectives on English Reading Achievement*, Ph.D. Edu., Mee. U., 1986

The major objectives of the inquiry were (i) to study the main effect of individualized, paired and general reading instructional strategies on English reading achievement, (ii) to study the interaction effect of reading instruction strategies and extraversion-introversion on English reading, (iii) to study the interaction effect of reading instruction strategies and learning objectives on English reading achievement, (iv) to study the interaction effect of extraversion-introversion and learning objectives on English reading achievement, and (v) to study the interaction effect of reading instructional strategies, extraversion-introversion and learning objectives on English reading objectives.

Three instructional strategies used were Individual Reading Instruction Strategy (IRIS), Paired Reading Instruction Strategy (PRIS) and General Reading Instruction Strategy (GRIS). The study used mixed factorial design for three sets of independent and dependent variables, viz. IRIS, PRIS, GRIS, learner personality

and taxonomic categories (knowledge and comprehension). The sample comprised 120 students of class IX of an intermediate college. Sixty students were extraverts and 60 were introverts. The tools used were English Reading Achievement Test (ERAT), SES Scale (Kulshreshtha) and Test of General Mental Ability (Jalota). Analysis of covariance, t-test, and F-test were used for hypothesis testing.

The major findings of the study were: 1. When the reading achievement scores were adjusted on the pre-achievement scores there was no significant difference between the mean achievement scores by the three instructional strategies. 2. The personality factor, introversion-extraversion influenced the effectiveness of the three instructional strategies. 3. The three instructional strategies did not differ in their effectiveness when learning objectives were taken into consideration. 4. The interaction effect between IRIS and GRIS was found to be significant. 5. The interaction of personality factors and learning objectives was not significant. 6. The mean score of the GRIS group was the highest, indicating that the General Reading Instruction Strategy was more effective than the other two strategies.

- *960. NARANG, R.H., *A Comparative Study of the Socio-economic and Home Factors Affecting the Academic Achievement of Boys and Girls (10 and 11 years) in the Urban and Rural Areas*, Ph.D. Edu., Bom. U., 1987

The major objectives of the investigation were (i) to study the effect of socio-economic status on the academic achievement of boys and girls in city, town and village areas, (ii) to study the relationship between the number of siblings and academic achievement, (iii) to study the relationship between homework and academic achievement, (iv) to study the effect of the relationship with the principal and with the teacher on academic achievement, and (v) to study the relationship of co-curricular activities, games, and hobbies with academic achievement. The main hypothesis of the study was that socio-economic status did not affect the academic achievement of boys and girls in city, town and village areas.

The study employed descriptive research design and survey method to study the effect of the current or immediate factors on the student's academic achievement. This method facilitated the use of a large cross sectional sample in the urban and rural areas. The

method of stratified cluster sampling was used for selection of the 1705 grade IV to VI pupils (891 boys and 814 girls) from Bombay city, the township of Thane and villages around Thane. The tools employed in this study were: (i) the Socio-economic Status Scale, (ii) the Exposure to Mass Media Scale, (iii) a questionnaire, and (iv) an interview schedule. The data were analysed with the help of statistical techniques like standard deviation, mean, t-test, product-moment correlation and percentage.

The major findings of the study were: 1. Socio-economic status did not affect academic performance in the city, town and village areas. 2. The number of siblings seemed to affect performance. Most high achievers had only one sibling. In the village areas most of the respondents among all categories of achievers had three siblings. 3. The exposure to mass media or the extent of exposure did not affect school achievement. 4. Regularity in doing homework helped achievement while copying it from others hindered performance. 5. The relationship with the principal did not affect academic achievement. 6. In the city area, the relationship with the teacher affected the achievement of Marathi medium girls. In the town area, achievement was affected by the ability of the respondent to go to the teacher with problems. 7. Where the non-academic programme of the school was concerned, participation in co-curricular activities was related to high achievement. However, the type of activities or hobbies pursued or the type of games played did not affect it. 8. The time spent on house work, the type of house, household chores performed, and the way free time was spent did not affect achievement. However, the amount of free time affected the achievement of only girls. 9. The relationship with friends with special reference to the number of close friends, visits to friends, frequency of visiting them, leisure activities and friction with classmates did not affect achievement. 10. Low achievement was related to being frequently scolded by the parents.

961. PAL, R., *Factor Analysis cum Factorial Study of Socio-Psychological Variables Related to Scholastic Achievement of Higher Secondary School-going Pupils*, Ph.D. Psy., Agra U., 1984

The objectives of the study were (i) to find out how far family relations, intelligence, self-concept, aspiration and anxiety were responsible for promotion or demotion of scholastic achievement in higher secondary pu-

pils, (ii) to study the interaction of the bivariate as well as trivariate independent variables (scholastic achievement, sex and SES) while they influenced family relations, intelligence, self-concept, aspiration and anxiety, and (iii) to factor analyse each for high and low scholastic achievers.

The sample comprised 240 subjects belonging to different SES, sex and scholastic achievement levels. It was selected by following the stratified random sampling method. The data were collected with the help of Sherry and Verma's Family Relationship Inventory (FRI), Singh and Saxena's Socio-Economic Status Scale, Singh and Tiwari's Level of Aspiration Test, Rastogi's Self-Concept Scale, and Srivastava's and Tiwari's Anxiety Scale. Data were analysed with the help of factorial design analysis of variance of equal cell size, t-test, Duncan's Range Test and Hotteling's Principal Axis Solution method.

The findings of the study were: 1. Parents' acceptance promoted scholastic achievement while mother avoidance as well as more concentration demoted scholastic achievement. 2. Males surpassed females in father acceptance while females surpassed males in mother avoidance as well as mother concentration. There was no impact of sex on mother acceptance, father avoidance and father concentration. 3. SES did not play any role in father acceptance and avoidance. Maximum magnitude of mother acceptance was revealed by the children of middle SES whereas the low SES group displayed minimum magnitude. Children of low social class promoted mother avoidance as well as father concentration, whereas the high social class children demoted it. 4. High scholastic achievers belonging to the middle social class promoted the maximum magnitude of father acceptance, whereas its minimum magnitude was availed of in the low scholastic achievers belonging to the high social class. The maximum magnitude of mother avoidance was availed of in the low scholastic achievers belonging to the middle SES whereas high scholastic achievers belonging to high SES displayed the minimum magnitude of mother avoidance. The maximum magnitude of father acceptance was availed of in males belonging to the high social class whereas females belonging to the same social class displayed the minimum magnitude of father acceptance. Females belonging to the high social class displayed the maximum magnitude of mother concentration whereas its minimum magnitude was displayed by males of the same social class. The maximum magnitude of father concentration was seen in males belonging to low SES whereas males

of high SES displayed the minimum magnitude of the same. 5. In the middle social class the maximum magnitude of father avoidance was displayed in the low achieving males. Low scholastic achievers promoted more father avoidance in the high social class, while high scholastic achievers in the middle social class tended to do so. 6. High scholastic achievers promoted predominantly verbal, non-verbal and total intelligence in comparison to their low achieving counterparts. 7. Males were more intelligent than females. 8. SES did not play any role in non-verbal as well as total intelligence. Children of high social class possessed more verbal intelligence as compared to lower social class children. 9. Male as well as female high scholastic achievers promoted predominantly non-verbal intelligence in comparison to their low scholastic achieving counterparts. Maximum non-verbal intelligence was availed of in high scholastic achieving females, whereas low scholastic achieving males displayed the minimum magnitude of the same. No significant effect of interaction between scholastic achievement and SES on intelligence was found. Females of the high as well as the middle social class promoted non-verbal intelligence. Males in the low social class tended to do so. In females, nonverbal intelligence increased with the increase in the SES whereas in males it was just the reverse. 10. There was no significant effect of interaction between scholastic achievement, sex and SES on the intelligence of students. 11. High scholastic achievers promoted self-concept in comparison to low scholastic achievers. 12. Low scholastic achievers promoted aspiration as well as anxiety in comparison to high scholastic achievers. 13. Sex had a significant impact on aspiration and anxiety—whereas males promoted aspiration, females surpassed the males in anxiety. 14. SES had a significant impact on aspiration. Pupils from low SES displayed the maximum magnitude of aspiration, while its minimum magnitude was seen in pupils of high SES. 15. Male low scholastic achievers displayed the maximum magnitude of aspiration, while its minimum magnitude was seen in male high scholastic achievers. Both male as well as female low scholastic achievers surpassed their high scholastic achieving counterparts in aspiration. On the other hand, among low achievers males superseded in females in aspiration, whereas among high achievers, females tended to supersede males. 16. Males belonging to middle SES had maximum magnitude of aspiration, whereas females of high SES displayed minimum magnitude of the same. Both males as well as females of middle SES surpassed their high SES counterparts in as-

piration and in both the SES classes, males promoted aspiration more in comparison to females. 17. In the case of high achievers, the maternal role cum intellectual goal-setting factor emerged. It comprised mother acceptance, mother avoidance, verbal intelligence, self-concept, and level of aspiration. On the other hand in the case of low achievers, two factors emerged. The first factor was parental acceptance-rejection and subjects' self-actualization cum motivational variables. It consisted of mother acceptance, father acceptance, father avoidance, verbal intelligence, total intelligence, self-concept and level of aspiration. The second factor was maternal involvement cum subjects' intelligence, which comprised mother acceptance, verbal intelligence and non-verbal intelligence.

*962. PATEL, S., *A Psychological Study of High Achievers*, Ph.D. Psy., Guj. U., 1986

The purpose of the study was to find out whether there was any relationship (positive or negative) between high achievement on the one side and study habits, intelligence, neuroticism, anxiety and socio-economic status, on the other.

The sample consisted of medical students (94 boys and 76 girls) drawn from the two medical colleges of Ahmedabad city. The students selected were studying in the fifth and seventh semesters in the year 1982. Only medical students were taken in the sample. The study could be called a selective as well as a purposive one, as the sample represented students from different social backgrounds, different economic strata and also different castes and religions. The instruments used for data collection were: (i) J.A. Taylor's Manifest Anxiety Scale, (ii) Eysenck's Neuroticism Inventory, (iii) Advanced Progressive Matrices—Sets I and II by J.C. Raven, (iv) a Socio-economic Status Scale, (v) Study Habits Inventory by C.J. Wrenn, and (vi) a Study Habits Questionnaire developed by the investigator. Chi-square test of independence was applied for analysis.

The major findings were: 1. No relationship was found between anxiety and achievement. 2. There was no relationship between neuroticism and high achievement. 3. The results of the entire sample showed that the higher the socio-economic status, the higher was the achievement. 4. The better and greater the number of good study habits, the higher was the achievement. 5. The Advanced Progressive Matrices score of the total sample showed that the mean IQ of the sample was

above 120. 6. No relationship was found between the percentage of marks at the S.S.C. examination and the passing or repetition of a semester for the entire sample. 7. More time being allotted to a difficult subject did influence the passing or failing of the students in the subjects. 8. A separate room for studies influenced the passing or failing of the students in the examination. 9. Concentrated study, as well as the study of the whole course did influence the passing or failing of the total sample of medical students.

963. PATHANI, R.S., *Psycho-social Developmental Stage (Identity vs. Role Confusion), Self-Evaluation (Self-Concept) and Need (Self-Analyzing) as Predictors of Academic Achievement (Actual and Perceived)*, Ph.D. Edu., Kum. U., 1985

The investigation was designed to study the effect of identity versus role-confusion, self-concept and need (self-actualisation) on academic achievement of adolescents.

The sample for the study consisted of 700 adolescents (360 boys and 340 girls) studying in 14 intermediate colleges.

The data were collected with the help of the Neurosis Measurement Scale by Uniyal and Bisht and the Identity vs. Role-Confusion Scale, Self-Concept Scale and Self-Actualization Scale, all of which were standardized by Bisht and Pathani.

The main findings of the study were: 1. Among the male students Identity vs. Role Confusion scores accounted for greater variance in academic achievement actual scores than academic achievement perceived scores. 2. Among female students the relationship of Identity vs. Role Confusion scores with academic achievement actual scores was lower than that with academic achievement perceived scores. 3. Self-Concept was a significant predictor of academic achievement (actual) and academic achievement (perceived). 4. Self-actualization possessed a relationship of a minimal degree with actual academic achievement and perceived academic achievement scores. 5. The predictability of three predictors jointly was higher for academic achievement (actual) as compared to academic achievement (perceived). 6. The effectiveness of three predictors jointly in accounting for the variance of academic achievement (actual) was higher in case of male students as compared with female students, whereas for ac-

ademic achievement (perceived), it was higher in case of female students as compared with the male students.

964. PAUL, S., *A Study of Cognitive Styles of High School Students of Home Science in Relation to Age, Achievement, Home Environment and Social Class*, Ph.D. Edu., Agra U., 1986

The objectives of the study were (i) to develop a cognitive style test for high school classes in home science on Heath's Model, (ii) to develop an achievement test for high school classes in home science to study its effects on cognitive styles of students, (iii) to develop a social class scale to see its effects on the cognitive styles of students, (iv) to develop a home environment inventory to study its effects on cognitive styles of students, (v) to study the effects of age ranging from 13+ to 18+ on the cognitive styles of home science students, (vi) to study the relationship of achievement of high school girls with cognitive style of home science students, (vii) to study the relationship of social class of students with cognitive style of the students of home science, (viii) to study the relationship between cognitive ability and preference modes of high school students in home science, (ix) to study the relationship between cognitive style scales and their achievement in home science, and (x) to study the effects of home environment on the cognitive styles of students in home science.

The sample consisted of 600 students of home science of high school classes drawn from nine intermediate colleges of Agra city. All of them were girls and their ages ranged from 13+ to 18+. For measuring the achievement of students in home science, an achievement test was constructed. A Social Class Scale was developed to measure social class. The scale comprised items related to occupation, income, education, caste, sacrifice made for the country, status of relatives, home and other resources. The test-retest reliability coefficients ranged from 0.94 to 0.98. A Home Environment Inventory was developed to measure home environment. The items were related to recognition of the child as a person, care for the child, observance of family traditions, parental aspirations for the child, forbearance of child's wishes, anxieties about the child, reproaches and punishments for undesirable behaviour, explaining undesirability of life, parental affection, indoctrination, encouragement for initiative and freedom. The test-retest reliability coefficient was 0.75. The cognitive

style was measured with the help of a Cognitive Preference Styles scale developed by the investigator. The items were related to questioning (Q), recall (R), application (A), and principle (P). The KR-20 formula was used to study the reliability of the test. The reliability coefficients ranged from 0.34 to 0.70. The data were analysed with the help of correlation, factor analysis, and analysis of variance techniques.

The findings were: 1. The cognitive preferences of individuals were stable along age, and during adolescence. 2. Girls in general expressed preference for a questioning mode of cognitive functioning in higher mental functions. Further, high achievement went with questioning and low achievement with recall modes. 3. With regard to cognitive styles of high school girls in relation to their social class, it was found that questioning, recall, application and principle was an ordered sequence. 4. Cognitive functioning was independent of the information taught and the distinction between the preference and ability modes were artificial. 5. Scientific curiosity, scientific rule, and technology, were the three factors described as instrumental for the high achievement of the girls in home science while dependence on the utility and memory factors made these girls' achievement low. 6. Each one of the four modes of cognitive style, viz., questioning, recall, application and principle, were positively and significantly correlated with home environment scores. The factors of home environment like recognition of child, parental aspiration, forbearance for the child's wishes, explaining undesirability of life, parental affections, encouragement for initiative and freedom were found to bear a positive and significant correlations with each of the four modes of cognitive styles. Observance of family traditions, reproaches and punishments and anxiety for the child were irrelevant as cognitive determinants or, rather, played an inhibitive role in the achievement and free development of students. 7. Reproaches and punishments were rarely used in the families of girls and their parents nursed high aspirations for their daughters. On factors recognition of the child, care for the child, indoctrination and encouragement for initiative, the parents were very frequently inspired, while on factors like forbearance for the child, anxiety about the child, explaining undesirability of life, parental affection and freedom, the parents displayed a moderate behaviour with regard to their daughters.

965. PURI, K., *A Study of Relation of Locus of Control, Environmental Facilities, Drive and Academic Achievement of Secondary School Students*, Ph.D. Edu., Pan. U., 1984

The objectives of the study were (i) to examine the pattern of general academic achievement in English language of higher secondary students, (ii) to study the main effects of variables of locus of control, environmental facilities, drive on general academic achievement and achievement in English language of higher secondary students, (iii) to study the interactional effects of locus of control and environmental facilities, locus of control and drive, drive and environmental facilities, locus of control and environmental facilities and environmental facilities and drive on general academic achievement and achievement in English language of higher secondary students, (iv) to study the linear relationship between locus of control, environmental facilities, drive in relation to general academic achievement and achievement in English language, and (v) to study the amount of variance accounted for by the variables—locus of control, environmental facilities and drive towards the general academic achievement in English language of higher secondary students.

A sample of 284 students (boys only) of higher secondary (final) was drawn from ten higher secondary schools, selected randomly from three districts of Punjab state. They were administered the tools—(i) the Rotter's I.E. Scale (1966), (ii) the Robinson Achievement Motivation Scale, (1961), (iii) a locally developed environmental facility scale, and (iv) an academic achievement pro forma. The data so collected were analysed with the help of three way design ($2 \times 2 \times 2$) of ANOVA.

The findings of the study were: 1. The main effects of locus of control, environmental facility, and drive were significant at .01 level for general academic achievement and achievement in English language. 2. Locus of control and environmental facility interaction was significant for general academic achievement and was not significant for achievement in English language. 3. Locus of control and drive interaction was not significant for general academic achievement and was significant for achievement in English language. 4. The environmental facilities and drive interaction was not significant for both general academic achievement and achievement in English language. 5. The locus of control and environmental facility and drive interac-

tion was non-significant for both general academic achievement and achievement in English. 6. Locus of control was negatively related to general academic achievement and achievement in English language. 7. The factor of high environmental facilities was positively related with achievement for general academic achievement. In the regression equation, the value of multiple R was 0.343 for general academic achievement and 0.234 for achievement in English language. 8. Locus of control contributed 11.83 per cent of variance in relation to general academic achievement and 5.5 per cent for achievement in English language. 9. Stepping up of the drive factor in the locus of control factor increased the value of R from 0.343 to 0.514 in the case of general academic achievement and from 0.234 to 0.342 in the case of achievement in English language. 10. When the environmental facility factor was stepped up into locus of control and drive, then the value of R increased from 0.514 to 0.679 in the case of general academic achievement and from 0.342 to 0.420 in the case of achievement in English language, 11. There was a significant relationship between linear combination of locus of control, environmental facility, drive and general academic achievements and achievement in English language.

*966. PURI, K., *Personality Traits and Self-Concept of 16-18 Years Old Under-achievers*, Ph.D. Edu., Avadh U., 1987

The objective of the investigation was to make a detailed study of the personality traits and self-concept of the under-achievers of the 16-18 years age group in the Indian context, along with the socio-economic status of their families.

The sample of the study consisted of 425 students (244 boys and 181 girls) of the 16-18 years age group, who had 90 or above PR on the Progressive Matrices Test and had secured less than 48 per cent marks in the high school examination. The sample was selected from 2147 class XI students of 12 intermediate colleges of Lucknow city. The tools used in the study were: (1) B. Kuppaswamy's Socio-economic Status Scale (Revised Edition, 1981); (2) Raven's Progressive Matrices Test; (3) R.B. Cattell's H.S.P.Q. (Forms A and B); and (4) G.P. Sherry, R.P. Verma and P.K. Goswami's Test of Self-Concept. Besides these tools, the criterion of academic achievement was the marks of the high school examination. The collected data were tabulated and

analysed using suitable statistical techniques.

The findings of the study were: 1. About 19.8 per cent of the intellectually gifted students did not come upto the expected level of academic performance. 2. The majority of the under-achievers belonged to lower socio-economic groups and had proper self-concept. 3. The under-achievers generally tended to be warm-hearted and easy going, had comparatively lower scholastic capacity, and were inactive. They tended to be assertive, aggressive, stubborn and dominant, were impulsive, lively, happy-go-lucky and gay persons, and tended to be socially bold. They were generally over-protected, sensitive, individualistic and reflective, and were found to be apprehensive, worrying and troubled. 4. The under-achiever girls tended to be more group-dependent, and were generally tense, over-wrought and frustrated.

967. RAJPUT, A.S., *Study of Academic Achievement of Students in Mathematics in Relation to Their Intelligence, Achievement Motivation and Socio-economic Status*, Ph.D. Edu., Pan. U., 1984

The objectives of the study were (i) to construct and standardize a test in mathematics for class V, (ii) to study the impact of intelligence at various levels on the achievement of students in mathematics, (iii) to analyse the effect of different levels of achievement motivation on the achievement of students in mathematics, (iv) to find out the effect of socio-economic status on the achievement of students in mathematics, and (v) to study the interactional effects of variables of intelligence, achievement motivation and socio-economic status on the achievement of students in mathematics.

In the first stage, the achievement test in mathematics was developed and standardized on a sample of 1000 students taken from various central schools. In the second stage, the study was conducted on a sample of 435 students (boys and girls) of grade V from various central schools. This sample of 435 students was administered the following tools: (i) the Raven's Standard Progressive Matrices for intelligence, (ii) the Aronson Graphic Expression Test for measuring achievement motivation, (iii) the Kuppaswamy's Socio-economic Status Scale (1962). On the basis of these tests the students were categorized into 27 groups having three categories (high, average and low) of each of the variables—intelligence, achievement motivation and socio-economic status.

Ten students in each category were retained. In this way the final sample of the study had only 270 students. The scores of achievement in mathematics were analysed with the help of three-way ($3 \times 3 \times 3$) analysis of variance.

The findings of the study were: 1. Intelligence affected the achievement of students in mathematics significantly at all the three levels, i.e. high, average and low. There was superiority of the high intelligent group of students over the average and low intelligent groups of students in their achievement in mathematics. Further, the average intelligence group were better achievers in mathematics than the low intelligence group. 2. In neutral classroom conditions, the achievement of students in mathematics was not affected by their achievement motivation. 3. The socio-economic status of the children affected the achievement of students in mathematics. The high socio-economic status group and the average socio-economic status group of students did not differ significantly on achievement in mathematics. Achievement of high socio-economic status and low socio-economic status students in mathematics differed significantly. Average and low socio-economic groups differed to give significant results on their achievement in mathematics. 4. The double and triple interaction effects between the variables of intelligence, achievement motivation and socio-economic status were not significant.

968. RAJPUT, B.M., *Academic Achievement as a Function of Some Personality Variables and Socio-economic Factors*, Ph.D. Psy., Guj. U., 1985

The basic problem was to ascertain whether faculty-wise different predictor variables, i.e. values, dependency, academic adjustment and socio-economic status of the parents, made a differential impact. The hypotheses formulated were: (1) Comparing through different faculties, boys and girls would differ with respect to the predictor variables and to the criterion variables. (2) A differential pattern of values would be observed with respect to arts, commerce and science students. (3) Dependency would be negatively related to academic achievement. (4) Academic adjustment would be positively related to academic achievement. (5) Socio-economic status of the parents would be positively related to academic achievement. (6) Boys and girls would differ in respect of value patterns. (7) Sexwise differences would be observed within each discipline with re-

spect to both the predictor and the criterion variables.

The sample size was chosen to be 42 for each of the six groups (boys and girls in each faculty—arts, commerce and science). The entire sample was selected from the higher secondary schools of Mandvi, Bhuj and Gandhidham. The value test by Allport-Vernon-Lindzey and adapted in Gujarati by Shah was used to obtain the scores of the students on six values proposed by Spranger. The split-half reliability on the sample size of 30, was found to be 0.76. The Dependency Scale originally designed by Flanders *et al.*, and adapted by Sinha was translated into Gujarati. It was used to collect data on dependency proneness of the sample. Its test-retest reliability was 0.82. The Academic Adjustment Inventory of Sinha and Singh in Hindi was translated into Gujarati and adapted for collecting data on academic adjustment. Its test-retest reliability was found to be 0.79. The Socio-economic Status Rating Scale designed by Rao was adapted to ascertain the socio-economic status of the pupils. Its test-retest reliability was 0.83. All the four inventories were considered operationally valid. Information regarding academic achievement in the S.S.C. examination was collected for each subject rather than considering the aggregate marks or the division. All these inventories were administered in succession at the same time, with an interval of five minutes between any two. Explore computer programme designed by Skinner was used for linear regression analysis, referred to as reduced rank regression as well as canonical analysis.

The major findings of the study were: 1. Fathers' occupation, fathers' education and academic achievement in science, social reconstruction, and mathematics/arithmetic, appeared to contribute meaningfully to faculty differences. 2. From among six values considered, only theoretical value appeared to be responsible for faculty differences. 3. Social value, mothers' education and achievement in Gujarati were responsible for sex differences. 4. The achievement in Gujarati and mathematics/arithmetic appeared to be predictive of sex differences. 5. Except in the case of values, sexwise differences were more or less absent in the commerce and science faculties. 6. With respect to the faculty of arts, no meaningful pattern appeared for values, SES of the parents and academic achievement. 7. SES for both boys and girls appeared to be uni-dimensional in the science faculty. 8. SES appeared to be bi-dimensional with respect to both boys and girls in the commerce faculty. Income and fathers' occupation

formed one component. Fathers' and mothers' education formed the other component. 9. Dependence proneness was not at all meaningfully related to academic achievement. 10. Academic adjustment was not meaningfully related to academic achievement.

***969.** ROY, K., *A Study of the Determinants of Reading Abilities of the Students in Bengali*, Ph.D. Edu., Kal. U., 1983

The main purposes of the study were (i) to develop norms of vocabulary for class V students, (ii) to develop norms of reading comprehension for class V students, (iii) to measure the extent of word recognition of the students of both sexes in different schools situated in different areas, (iv) to measure the extent of reading comprehension of the students of both sexes in different schools situated in different areas, (v) to study the significance of the differences, if there were any, in the scores obtained by the students of class V in vocabulary developed, (vi) to study the significance of the differences, if there were any, in the scores obtained by the students of class V in reading comprehension developed, (vii) to find out intercorrelations among reading comprehension, vocabulary, education of the parents, occupation of the parents, and income of the parents, and (viii) to deduce a multiple regression equation of reading comprehension as the dependent variable on vocabulary, education of the parents, occupation of the parents, and income of the parents, as independent variables. Eleven hypotheses were examined.

A descriptive study was undertaken. A Vocabulary Test and a Reading Comprehension Test for class V were developed. The Vocabulary Test was administered on 275 boys and girls (just promoted to class VI). The Reading Comprehension Test was administered on 225 boys and girls. Two test norms were developed. SES Scale (rural and urban) was also used. Distribution of scores in each test was represented graphically for different comparative studies. ANOVA, Mann-Whitney U-tests, correlation, etc. were used. Two regression equations (one for the urban group and another for the rural group) were developed.

Some of the major conclusions were: 1. Boys showed more proficiency in reading comprehension in Bengali than girls. 2. Urban and semi-urban students showed better performance in reading comprehension in Bengali than semi-urban and rural students, respectively. 3. Urban girls possessed higher reading comprehension in

Bengali than semi-urban girls. 4. Urban boys had more reading comprehension than semi-urban boys as well as urban girls. 5. Semi-urban boys possessed more reading comprehension than semi-urban girls. 6. Scores in reading comprehension of the students could be predicted from their vocabulary scores and SES scores of their parents. 7. Profession of the parents did not contribute positively to the prediction of reading comprehension. 8. Scores in reading comprehension of urban and rural students could be predicted from two separate multiple regression equations.

***970** SABAPATHY, T., *A Study of the Relationship of Manifest Anxiety Emotional Maturity and Social Maturity of Standard X Students to Their Academic Achievement*, Ph.D. Edu., Ban. U., 1986

The major objectives of the study were (i) to construct a tool on emotional maturity to measure the emotional maturity level of standard X students, (ii) to find out the relationship, if any, between the independent variables, namely, manifest anxiety, emotional maturity, social maturity, socio-economic status, sex of the students, medium of instruction and type of school management, on the one hand, and academic achievement of standard X students on the other, (iii) to identify the significant predictors of the academic achievement of standard X students, and (iv) to formulate regression equations for predicting the academic achievement of standard X students.

The independent variables were measured by Sinha's Manifest Anxiety Scale, Emotional Maturity Scale, Rao's Social Maturity Scale and Kuppaswamy's SES Scale. For the criterion variable (academic achievement), the SSLC Examination marks were taken. The sample of 574 boys and 531 girls selected from private aided, private unaided, corporation and government schools was based on the stratified proportionate random sampling technique. Students were selected from both Kannada and English medium schools. The data were analysed using zero order correlations, chi-square test, multiple correlation, multiple regression (stepwise forward) and two-way ANOVA (least square technique).

The following were the main findings: 1. Manifest anxiety was negatively and significantly related to achievement in mathematics, achievement in general science, achievement in social studies and academic achievement. 2. Emotional maturity was posi-

tively and significantly related to achievement in mathematics, achievement in general science, achievement in social studies, and total academic achievement. 3. Social maturity was significantly and positively related to achievement in general science only, but not to achievement in mathematics or total academic achievement. 4. Socio-economic status was significantly and positively related to all the areas of achievement. 5. Girls were higher achievers in mathematics, general science and social studies when compared to boys. 6. Students from English medium schools scored higher in all areas of academic achievement over students from Kannada medium schools. 7. Students from private schools scored higher than students from government schools. 8. Emotional maturity, socio-economic status and social maturity turned out to be significant predictors of total academic achievement.

*971 SAHOO, R., *Reading Achievement and Verbal Processing Ability of Achieving and Non-Achieving Readers*, Ph.D. Psy., Utkal U., 1987

The objectives of the investigation were to study the effect of reading achievement (i) on the tasks of verbal processing skill, (ii) on simultaneous processing measures, (iii) on successive processing measures, and (iv) on all the measures of verbal processing, simultaneous and successive skills.

The achieving and non-achieving readers were selected on the basis of the Graded Reading Comprehension Test in Oriya administered to 700 children of grade IV from seven urban schools of Bhubaneswar, Orissa. The two groups, each consisting of 40 nine to ten years old children, were matched for their non-verbal intelligence scores and were administered the Marker Tests of Simultaneous and Successive Processes comprising verbal and non-verbal tests along with other specific measures of verbal processing. The scores of the achieving and non-achieving readers were analysed by using t-test and Hotelling's T analysis.

The major findings of the study were: 1. The groups did not differ in the measures of non-verbal simultaneous and non-verbal successive processing whereas the achieving readers were found to be significantly better than the non-achieving ones on tests of verbal simultaneous and verbal successive and other successive measures. 2. The difference between the achieving and non-achieving readers was clearly along the verbal/non-verbal dimension rather than the simulta-

neous successive dimension. 3. The intercorrelations computed between the variables for both the reading groups showed that most of the measures having verbal components correlated significantly.

972. SARAH, SHANTA KUMARI, WILLIAMS, A *Study of the Attitude of High School Pupils towards General Science and Its Relationship with Achievement in the Subject*, Ph.D. Edu., Anna U., 1983

The objectives of the study were (i) to find out the standard of achievement of the pupils of standard X in general science, (ii) to identify the area of weakness in their study of science, (iii) to study their attitude towards science as well as science education, (iv) to examine if there were any differences among the different groups of students such as boys and girls and rural school pupils and urban school pupils in respect of their achievement in science, attitude towards science and attitude towards science education, (v) to determine the relationship that existed, if any, between the pupils' attitude towards science and their achievement in it, between their attitude towards science education and their achievement, between their socio-economic status and their achievement, between their attitude towards science and attitude towards science education, and between their achievement in science on the one hand and their socio-economic status, attitude towards science and science education on the other, and (vi) to determine the relative importance of each of the independent variables mentioned above in the prediction of the pupils' achievement in science.

A sample of 3000 cases was taken up for the study on the basis of stratified proportionate sampling. It formed 26.64 per cent of the total population. The tools employed in the investigation were an achievement test in general science, attitude scales to measure the pupils' attitudes towards science and science education, and socio-economic status scales (urban and rural).

Some of the major findings were: 1. The pupils' achievement was poor, in general, in respect of understanding and application, compared to their achievement in respect of the skills and knowledge objectives of teaching general science in high schools. 2. The attitude of the high school pupils towards science and science education in Tamil Nadu was generally favourable but there was a wide disparity in their attitudes. 3. When the effects of pupils' attitude towards science and their attitude towards science education were partialled out, the

coefficient of correlation between their achievement and socio-economic status was found to be 0.1164 and it was significant at 0.01 level. 4. When the effects of pupils' attitude towards science as well as their socio-economic status were partialled out, the coefficient of correlation between their attitude towards science education and achievement was found to be 0.4062 and it was significant at 0.01 level. 5. When the effects of the pupils' attitude towards science education and their socio-economic status were partialled out, the coefficient of correlation between their attitude towards science education and their achievement was found to be 0.07661 and it was not significant. 6. It was found that about 30 per cent of the variance in science achievement was accounted for by one's attitude towards science, one's attitude towards science education and one's socio-economic status.

973. SARKAR, U., *Contribution of some Home Factors on Children's Scholastic Achievement*, Ph.D. Psy., Cal. U., 1983

The objectives of the study were (i) to find the differences between high achievers and low achievers with respect to home factors like educational environment, income, property, spatial environment, social background, provision of facilities, parent-child relationship, home-making role, punitive control and intelligence, and (ii) to obtain the multiple correlation and the multiple regression equation between academic achievement (criterion variable) and home factors (predictor variables).

The sample consisted of 192 students of Class II to Class VII, age group 7 to 12 years of eight selected schools in Calcutta and their mothers interviewed at home. Ninety-six students were high achievers and 96 were low achievers. The stratified random sampling design was used as the sampling frame. The measuring instruments used were Cattell's Culture-Fair Intelligence Test, Schaefer and Bell's Parental Attitude Research Instrument (Bengali version), an interview schedule to collect information on home environment and examination marks. A contrast group design was used, and t-test, product-moment correlation and multiple regression analysis were the statistical techniques.

The major findings were: 1. The home variables such as educational environment, income, spatial environment, social background, provision of facilities and parent-child relationship, showed a significant differ-

ence between the high achievers and low achievers at .01 level. 2. The child-rearing attitude of the mothers of the two groups showed a significant difference between the mothers of the high achievers and the low achievers at .01 level, indicating thereby that the mothers of the two groups possessed different attitudes regarding child-rearing practices. 3. The multiple correlation coefficient was 0.546. 4. The multiple regression equation revealed that the contribution of parent-child relationship to academic achievement was about 17 per cent, of social background about 7 per cent and of educational environment about 4 per cent. The remaining five factors—income, spatial environment, rejection of home-making role, harsh punitive control and intelligence, explained about 2 per cent of the variance of the criterion scores.

974. SARMA, H.N., *A Study on the Effect of Admission at Early Age on Academic Achievement with special reference to the Pupils of the Primary Schools of Jorhat Town and Its Surrounding Suburban Areas*, SIE, Assam, 1973

The main aim of the project was to study the effect of admission at an early age on academic achievement with special reference to the pupils of the primary schools of Jorhat town and its surrounding suburban areas.

Primary schools of the urban and suburban areas of Jorhat sub-division were selected. The children were divided into two groups (having educationally conscious parents and indifferent parents). A ten per cent random sample was drawn from these two groups. The ages of the selected children were collected by consulting their horoscopes. The achievement scores of the children admitted in class A in 1968 were collected from 1968 to 1971. The sample was divided into four age groups (3 and 3⁺; 4 and 4⁺; 5 and 5⁺; and 6 and 6⁺). Sufficient field investigation was made to eliminate the effects of external factors on results. Age-group-wise differences in achievement and overall achievement of all the age groups together were estimated. T-test was applied to find out the significance of differences. Causes of decline in achievement, range and causes of variability, interrelationships between age, ability and achievement, availability of physical factors essential for normal academic instruction, individual factors necessary for optimal academic growth of children, etc. were found out.

Some of the major conclusions were: 1. Age and growth of children had a significant relation with their academic progress. It appeared that admission at an early age affected children much in their academic progress. Early age group learners found difficulty in maintaining their achievement consistently and were not in an advantageous position. 2. No definite relationship existed between achievement and ability. Most of the children of all age groups were found to deviate. 3. No child was definite about the distance and direction of deviation in achievement. There might be some major deficiencies, primarily in instructional methods and content of the syllabus. 4. There was no significant difference in achievement of the various age groups. The trend of achievement of all the age groups tended to fall very significantly from 1970. 5. Schools were lacking essential physical facilities and psychological and educational environment. 6. There were various causes of the decline in achievement. Both 4⁺ and 5⁺ age groups appeared suitable to start with primary education. They maintained a consistent rank correlation throughout the entire course. All the age groups appeared to show a declining trend in achievement from class I.

975. SHANMUGASUNDARAM, R., *An Investigation into Factors related to Academic Achievement among Undergraduate Students under Semester System*, Ph.D. Psy., Madras U., 1983

The objective of the study was to identify and assess the influence of certain factors on the academic achievement of undergraduate students. The factors were self-concept, manifest anxiety, study habits, intelligence, adjustment problems, achievement motivation, sex and the nature of the institutional environment. The rationale for the choice of these factors was their identification as correlates of achievement in earlier studies.

Mohsin's Self-Concept Scale, Taylor's Manifest Anxiety Scale, Raven's Progressive Matrices, Reddy's Adjustment Problems Checklist, Mahrabian's Achieving Tendency Scale and a scale on study habits constructed and standardized by the investigator himself were the tools utilized for data collection. The Fourth Semester University External Examination marks were the data on academic achievement.

The sample consisted of 620 students—330 high achievers and 290 low achievers. They were in 20 col-

leges located in urban, semi-urban and rural areas within the jurisdiction of the Madras University. The statistics used in analysing the data and hypotheses testing were mean, standard deviation, critical ratio, partial correlation, multiple correlation and multiple regression.

The following were the conclusions: 1. High achievers had better study habits, higher intelligence and higher achievement motivation than low achievers. Low achievers had more manifest anxiety and more adjustment problems than high achievers. 2. High and low achievers did not differ significantly in their self-concept. 3. The partial effect of achievement-related variables upon academic achievement was low compared to the unpartialled effect, that is, when the effects of other variables were not partialled out. 4. Multiple correlation of the achievement-related variables upon academic achievement was significantly high, thus indicating their cumulative effect. 5. The cumulative effect of the achievement-related variables upon academic achievement was high for the higher achievers compared to that on the low achievers. 6. Urban students were more intelligent, had better study habits and higher achievement motivation and performed better academically than semi-urban and rural students. 7. Rural and semi-ruban students, however, had better self-concept than urban students. And rural students had more manifest anxiety than urban students. 8. Among high-achieving urban students study habits, intelligence and achievement motivation had a significant positive influence upon academic achievement. 9. Manifest anxiety and adjustment problems had a significant negative influence upon it. 10. The partial effect of achievement-related variables upon academic achievement was higher than that of the unpartialled effect among urban, semi-urban and rural students. 11. The cumulative effect of achievement-related variables upon academic achievement was higher among urban students than among semi-urban and rural students. 12. Women students had higher intelligence, greater achievement motivation and better study habits and they also performed academically better than men students. 13. Men students had better self-concept but they also had greater anxiety and more adjustment problems than women students. 14. The cumulative effect of the achievement-related variables upon academic achievement was higher among the women students than among the men students.

976. SHARMA, PREMALATA, *A Study of Factors related to Academic Underachievement of Girls of Secondary Schools Located in Rural Areas of Haryana*, Ph.D. Edu., Mys. U., 1981

The purpose of the study was to investigate the factors related to academic high achievement and underachievement of rural girls coming from the secondary schools of Haryana. An attempt was also made to find out the specific contribution of variables towards high achievement and underachievement.

This study was conducted in two phases. Phase I was a preliminary study for the selection of under and high-achievers. Raven's Standard Progressive Matrices and Mohsin's Verbal Test of Intelligence were administered to a sample of 1225 students. Correlation between verbal, nonverbal and criterion variables were computed and three samples of 200 each from the total sample were drawn. The top 27 per cent of the population were called high-achievers and the bottom 27 per cent low-achievers. For the second phase of the study, a sample of 100 girls was chosen from each group and the following tools were used to collect the data: (1) Wrenn's Study Habit Inventory adopted by Mohsin, (2) Bhatia's Ach Motivation Test (1974), (3) the Academic Motivation Inventory by Singh (1965), (4) Mohsin's Spelling Test, (5) the Vocabulary Test prepared by the Educational and Vocational Guidance Bureau, Bihar, and standardized by Sharan (1964), (6) the Reading Speed and Comprehension Test of the Srivastava (1964), (7) Maslow's Security-Insecurity Test adopted by Singh (1965), (8) Bell's Adjustment Inventory adopted by Mohsin, and (9) Srivastava's Check List of Problems. The data were analysed using t-test to show the difference between under and high-achievers, and the centroid method of factor analysis to find out the contribution of each variable to high and underachievement.

It was found: 1. Poor academic motivation, linguistic ability, planning of study work, adjustment and emotional insecurity contributed to underachievement. 2. The underachievers were significantly poor in their performance on all these variables. 3. All the variables included in this study were inter-related. Hence remedial programmes for underachievers had to be necessarily global in approach.

977. SHARMA, R., *A Study of Factors involved in Attribution for Success and Failure in School*, D. Phil. Psy., All. U., 1986

The major objectives of the study were (i) to explore the

relationship between teacher's expectations and their attribution for student's performance, (ii) to examine the role of social factors in teacher's expectations, (iii) to examine the influence of social background, particularly of caste of students on teacher's attribution for student's success and failure, (iv) to find out the nature of attribution for their own performance, made by children belonging to high and low teacher's expectation groups and different social background, and (v) to find out the linkages between attributions and motivational state of the individual.

The investigation was conducted in five different studies, all conducted in the natural settings of classrooms. Three studies made use of an achievement task and attributions were recorded on the basis of manipulated feedback. In one study, the nature of teacher attribution was studied from student's performance in a school examination. The samples of teachers and pupils were drawn from classes IV, V, VII, VIII of local schools. Contingency coefficients and ANOVA, were the statistical techniques used for data analysis and hypotheses testing.

The major findings were: 1. Teachers had a higher degree of liking, familiarity and expectation in case of students belonging to high social class and high caste as compared to low caste and low class students. 2. Teacher's attributions regarding student's success and failure were influenced by the kind of expectations they had about them. 3. Success of high expectation and failure of low expectation students were attributed to their 'Family', 'Ability' and 'Effort'. Failure of high expectation and success of low expectation was attributed to the nature of the task and chance factors. 4. Teachers attributed success of high caste and failure of low caste students more to their family and ability and less to chance and task. They attributed failure of high caste and success of low caste students more to chance and less to family, ability or effort. 5. Teacher's attributions for student's performance in an actual school examination and those based on experimentally manipulated feedback were found similar. 6. High and low expectation students differed in making self attributions for their performance. High expectation students made greater attributions for their success to ability and effort in comparison to failures. In case of low expectation students, the trend was not clear. 7. Attribution of success to internal factors like ability and effort and failure to external factors like chance, was associated with positive self-concept and low degree of fear of failure, whereas attribution of success to external categories like

chance and failure to internal categories like ability and effort was associated with negative academic self-concept and high degree of fear of failure.

Some of the educational implications of the study are: (1) There is a need for intervention in the student-teacher relationship to improve the performance of students in school. The intervention may be made at teacher as well as student level. (2) Teachers should be made aware of their own bias in interaction with students. Teachers may be particularly oriented for making attributions to internal, controllable factors, such as effort so that student's poor performance may be improved. (3) Specific and judicious use of praise and criticism by teachers for high and low expectation students is also likely to improve student performance. (4) Students also can be trained to understand the importance of internal factors, particularly effort, to improve academic achievement.

978. SHARMA, R.M., *Psychological Determinants of Backwardness at the High School Stage*, Ph.D. Edu., Jammu U., 1982

The objectives of the study were (i) to identify backward and non-backward students, (ii) to study the differences in personality profiles of backward and non-backward students, (iii) to find out whether the backward and non-backward students differed significantly in different areas of adjustment, (iv) to study the adjustment aspects of backward and non-backward students with special reference to their socio-economic conditions, (v) to study the significance of difference in creativity scores of backward and non-backward boys and girls, (vi) to study the sociometric pattern of backward and non-backward students, and (vii) to study differences in adjustment with respect to creativity, SES, sex and types of students.

For the collection of data the tools employed were the Aligarh Verbal Intelligence Test, the H.S. Personality Questionnaire, the Saxena Adjustment Inventory, the SES questionnaire of Jalota, Pandey, Kapoor and Singh, the Wallach and Kogan Battery of Creativity adapted by Parmesh and Sociometry Questionnaire.

The main findings of the study were: 1. Boys and girls did not differ significantly on adjustment scores. 2. Backward and non-backward students, who were average over other independent factors, differed significantly from each other on overall adjustment scores. 3. Creativity and socio-economic status were independent of

adjustment. 4. Out of six first-order interactions, only two were significant. The combined interaction showed that there were differences in the pattern of adjustment for different levels of independent factors. Backward girls were found to be highly adjusted in comparison to the influence of other factors. 5. Out of the four second-order interactions, only two came to be significant. The combined interaction of these factors influenced the adjustment scores. It was revealed that the adjustment of non-backward, low and middle creative students at different levels of SES contributed to making the interaction significant. 6. The combined interaction between all the variables was significant. It indicated that there was a significant difference in the adjustment scores of different levels of four factors when taken together.

979. SHARMA, S.D., *Relationship of Leg Power, Speed of Movement, Co-ordinative Abilities and Flexibility to Acceleration Ability in Sprinting of 14 to 16 Years Boys of Haryana State*, Ph.D. Phy. Edu., Kur. U., 1987

The objectives of the study were (i) to find out the relationship between leg power and acceleration ability in sprinting, (ii) to find out the relationship between speed of movement and acceleration ability in sprinting, (iii) to find out the relationship between coordinative ability and acceleration ability in sprinting, (iv) to find out the relationship between flexibility and acceleration ability in sprinting, (v) to find out the relationship between coordinative ability and acceleration ability in sprinting, (vi) to find out the acceleration ability of the 14+ to 16+ years age group, (vii) to find out the acceleration ability of the 15+ to 16 years age group, and (viii) to find out acceleration ability of the 14+ to 15 years age group.

The sample of the study consisted of 700 male subjects selected randomly from the schools of Haryana State. Out of these 700 subjects, 350 belonged to the 14+ to 15 years age group and 350 to the 15+ to 16 years age group. They were administered the following tests: (i) The standing broad jump, (ii) three hops with left leg, (iii) three hops with right leg, (iv) plate stepping left, (v) plate stepping right, (vi) zig-zag run, (vii) forward trunk bending, (viii) 30 metre acceleration run. The data so collected were analysed with the help of multiple correlation and prediction equation.

The findings of the study were: 1. There existed a significant relationship between leg power and accelera-

tion ability in sprinting among the 14+ to 16 years age group. 2. There was a significant relationship between speed and movement and acceleration ability in sprinting among the 14+ to 16 years age group. 3. There was a significant relationship between coordinative abilities and acceleration ability in sprinting among the 14+ to 16 years age group. 4. The variables, leg-power, speed of movement, coordinative abilities and flexibilities were found less functionally independent in the 14+ to 16 years age group. 5. When the combined effect of different variables was analysed, leg power, speed of movement, coordinative abilities and flexibility correlated significantly with acceleration ability in sprinting among the 14+ to 16 years age group. 6. There was a significant relationship between leg power and acceleration ability in sprinting among the 15+ to 16 years age group. 7. There was a significant relationship between speed of movement and acceleration ability in sprinting among the 15+ to 16 years age group. 8. There was a significant relationship between coordinative abilities and acceleration abilities in sprinting of the 15+ to 16 years age group. 9. The variables, leg power, speed of movement, coordinative abilities and flexibility were found less functionally independent in the 15+ to 16 years age group. 10. The variables, leg power, speed of movement, coordinative abilities and flexibility correlated significantly with acceleration ability in sprinting among the 15+ to 16 years age group. 11. There was a significant relationship between leg power and acceleration ability in sprinting among the 14+ to 15 years age group. 12. There was a significant relationship between speed of movement and acceleration ability among the 14+ to 15 years age group. 13. There was a significant relationship between flexibility and acceleration ability in sprinting of the 14+ to 15 years age group. 14. The variables, leg power, speed of movement, coordinative abilities and flexibility correlated significantly with acceleration ability in sprinting among the 14+ to 15 years age group. 15. Acceleration ability was found to be higher in the 15+ to 16 years age group than the 14+ to 15 years age group.

980. SHUKLA, C.S., *Achievement of Primary School Children in relation to Their Socio-economic Status and Family Size*, Ph.D. Edu., BHU, 1984

The objectives of the study were (i) to find out rural-

urban and sex differences in the academic achievement of primary school children, (ii) to study the relationship between SES and academic achievement, (iii) to find out the relationship between the size of the family and academic achievement, (iv) to study the relationship between structure of the family and academic achievement, (v) to examine the relationship between number of children in the family and academic achievement, and (vi) to study the relationship between adult/child ratio in the family and academic achievement.

The study was conducted on a sample of 2000 rural and 500 urban primary school children studying in classes III and V of 33 rural and 11 urban basic primary schools randomly drawn from the list of all basic primary schools of the Varanasi region. This sample consisted of primary school children who were within the normal range of intelligence as measured by Joshi and Tripathi's Non-Verbal Test of Intelligence. Achievement Tests in Hindi, arithmetic, general science, social studies, along with an SES Index prepared and standardized by the investigator were administered to the subjects. Mean, SD, t-test and product-moment coefficient of correlation were used for analysing the data.

The following conclusions were drawn: 1. There were no significant sex and rural-urban differences in the academic achievement of primary school children. 2. SES was positively and significantly related to academic achievement. 3. At class III level, children belonging to the large family size category had significantly better academic achievement than those of average and small family size categories. 4. At class V level, the positive impact of large family size had been completely nullified. There was a tendency of better achievement among the children belonging to the small family size category. 5. The structure of family, whether joint or unitary, had no significant differential impact on academic achievement. 6. The number of children below 14 within the family had no differential impact on the academic achievement. 7. The Adult-child ratio of (1:1) had shown significantly greater relationship with academic achievement.

The implications of the investigation are: (1) Children belonging to low SES families deserve more financial assistance for better academic achievement. (2) The national programme of population planning has to be strengthened to ensure better academic achievement of children.

981. SINGH, B., *A Study of Some Possible Contributing Factors to High and Low Achievement in Mathematics of the High School Students of Orissa*. Ph.D. Edu., Sambalpur U., 1986

The hypotheses of this study were: (1) Achievement in mathematics is significantly related with intelligence, scientific interest, mechanical interest, interest in agriculture, interest in business, interest in social service, interest in art, interest in official activities, interest in administrative activities, socio-economic status, family relationships, social relationships, emotional stability, conformity, adjustment to reality, mood, leadership, study habits, study and attitudes. (2) At least two variables from among intelligence, scientific interest, mechanical interest, interest in agriculture, interest in business, interest in social service, interest in art, interest in official activities, interest in administrative activities, SES, family relationships, social relationships, emotional stability, conformity, adjustment to reality, mood, leadership, study habits and study attitudes explain the differences between the high achieving group and the low achieving group, in achievement in mathematics.

From the office of the Board of Secondary Education, Orissa, Cuttack, the size of the student sub-population of class XI in each of the three zones, Central, Western and Southern, was obtained. The size of the sub-sample for each zone was decided by proportional sampling. Then the sample was drawn by the principle of simple randomization using random numbers. Thus, the sample consisted of 370 subjects. An achievement test in mathematics developed by the investigator, Cattell's Culture Fair-Intelligence Test (CFIT), scale 3 (Form A + Form B), Samal's Vocational Interest Inventory (VII), Samal's Socio-economic Status Scale (SESS), Minnesota Counselling Inventory (MCI), and Survey of Study Habits and Attitudes (SSHA) Form H, were used to collect data. The data were analysed with the help of correlation and multiple regression analysis.

The findings were: 1. Achievement in mathematics was positively significantly related with intelligence, SES, and study attitudes. But achievement in mathematics was not related with scientific interest, mechanical interest, interest in agriculture, interest in business, interest in social service, interest in art, interest in official activities, interest in administrative activities, family relationships, social relationships, emotional stability, conformity, adjustment, mood, leadership, and

study habits. 2. Regression analysis revealed that study habits and interest in agriculture were significantly correlated with achievement in mathematics. 3. High achievers scored high in the study attitudes survey while low achievers scored low; high achievers were more intelligent than the low achievers, and high achievers in general were of higher SES than the low achievers. Thus, intelligence, study attitudes and SES contributed in this order of importance to discrimination between the high and low achieving groups.

982. SINGH, D.R., *Study of Memory, Symbolic Representation and Some Other Mental Abilities in Relation to Achievement in Chemistry at Graduation Level*, Ph.D. Edu., Gor. U., 1983

The objectives of the study were (i) to prepare a mental ability test of memory, reasoning, numerical ability and symbolic representation, (ii) to prepare an achievement test in chemistry for B.Sc. students, (iii) to find out intercorrelations between different subtests, (iv) to determine the amount of contribution made by different subtests to the criterion scores, and (v) to find out parameters for the prepared tests. The following hypotheses were formulated: (1) The selected predictors are intercorrelated. (2) The predictors have a significant relationship with the criterion, i.e. achievement in chemistry. (3) Sex differences have no effect on scores and predictor-criterion relationship.

The achievement test (multiple choice type) in chemistry was prepared by the investigator. The sample comprised 400 B.Sc. students, male and female, from the eastern districts of U.P. The final test included altogether 230 items in five subtests to be completed in 195 minutes.

The major conclusions drawn were: 1. The mental abilities selected under this study, viz. numerical ability, reasoning ability, memory and symbolic representation showed a positive influence on the students' achievements in chemistry at graduation level. 2. The regression coefficient calculated from the scores of boys and girls revealed that the reasoning and symbolic representation abilities contributed much to the criterion. Numerical ability and memory acted as the suppression variables, i.e. they reduced the spurious influence of other variables and minimized undesirable effects of these factors. 3. The forecasting efficacy of the regression equation pointed out that the tests could be used in predicting the performance of boys and girls in chemis-

try at graduation level. 4. The multiple R calculated for boys and girls revealed that the predictors selected had a higher degree of joint relation with the criterion. 5. The regression coefficient and multiple-R calculated from the scores on the predictors provided the *raison d'être* for their inclusion as the indetermined variables.

983. SINGH, H., *A Survey of the Study Habits of High, Middle and Low Achiever Adolescents in Relation to Their Sex, Intelligence and Socio-economic status*, Ph.D. Edu., HPU, 1984

The objectives of the study were (i) to find out the differences in the study habits of adolescent boys and girls, (ii) to find out the differences in the study habits of adolescent boys and girls at three levels of academic achievement—high, middle and low, (iii) to study the interactional effect of sex and academic achievement in relation to the study habits of adolescents, (iv) to find out the differences in the study habits of adolescent boys and girls at three levels of intelligence—high, middle and low, (v) to study the interactional effect of academic achievement and intelligence in relation to the study habits of adolescent boys and girls, (vi) to find out the differences in the study habits of adolescent boys and girls at different levels of socio-economic status—high, middle and low, (vii) to study the interactional effect of academic achievement and socio-economic status in relation to their study habits, (viii) to study the interactional effect of intelligence and socio-economic status in relation to their study habits, and (ix) to study the triple interaction among academic achievement, intelligence and socio-economic status in relation to their study habits.

A sample of 1600 adolescent students (800 boys and 800 girls) studying in class IX was selected randomly from high and higher secondary schools of rural and urban areas of Himachal Pradesh. Out of 12 districts of Himachal Pradesh only five districts, namely Bilaspur, Hamirpur, Kangra, Mandi and Shimla were selected randomly. In general, equal numbers of boys and girls were selected randomly from each school. But in some of the schools a sufficient number of girls was not available, so from these schools all the girls were taken for data collection. The tools used were Socio-economic Status (SES) Scale for rural population by Udai Pareek and G. Trivedi, Socio-economic Status Scale for urban population by Jalota, Pandey, Kapoor and Singh, General Mental Ability Test by Jalota, and Study Habits In-

ventory by B.V. Patel. Analysis of the data was carried out by applying analysis of variance.

The main findings of the study were: 1. Adolescent boys had significantly better study habits than adolescent girls. 2. Study habits were related to the academic achievement significantly. High achieving adolescents had significantly better study habits than middle achievers. Middle achievers had significantly better study habits than low achievers. 3. Study habits of adolescent boys and adolescent girls differed significantly at different levels of academic achievement i.e., high, middle and low. 4. Study habits of adolescent boys and adolescent girls differed significantly at different levels of intelligence i.e. high, middle and low. 5. Academic achievement and intelligence did not interact significantly in relation to study habits of either adolescent boys or girls. 6. Study habits of adolescent boys and adolescent girls differed significantly at different levels of socio-economic status i.e. high, middle and low. 7. Academic achievement and socio-economic status interacted significantly in relation to the study habits of adolescent boys and girls. 8. Intelligence and socio-economic status did not interact significantly in relation to the study habits of either adolescent boys or girls. 9. The triple interaction among academic achievement, intelligence and socio-economic status was not significant in relation to the study habits of either adolescent boys or girls.

*984. SINGH, P., *A Comparative Study of Achievement, Adjustment, Attitudes and Problems of First and Subsequent Generation Learners Belonging to Scheduled Castes at Higher Secondary Level*, Ph.D. Edu., Mee. U., 1987

The objectives of the study were (i) to study and compare the enrolment of the first and subsequent generation learners belonging to the Scheduled Caste population, (ii) to study and compare the achievement of the first and subsequent generation learners, (iii) to study and compare the adjustment of the first and subsequent generation learners, (iv) to study and compare the attitudes of the first and subsequent generation learners, and (v) to study and compare the problems of the first and subsequent generation learners.

To test the attitudes of the students an inventory was prepared by the researcher. For the purpose of standardizing the Student Attitude Inventory (SAI), 185 students (boys) of class XI were selected from intermediate

colleges of Meerut division. For reliability and validity, a sample of 100 students (male) was selected. Test-retest and split-half reliability were found to be 0.90 and 0.70. For validity the logical method was used. To find out the problems of the students, the Mooney Problem Checklist was used which has been adapted in Hindi by Srivastava and Rai. Test-retest reliability coefficient of this inventory was 0.93. For adjustment of the students, Asthana's Adjustment Inventory was used. The reliability coefficient of the inventory was 0.97 for college boys and girls. For the purpose of the study 166 students (boys) of Scheduled Castes were selected as the sample. The data were analysed by using the significance of the difference between percentage. The chi-square test of independence in contingency tables and the K-S test (Kolmogorov-Smirnov Test) were used for testing the hypothesis.

The findings were: 1. The enrolment of first generation learners was significantly higher in comparison to the children of subsequent generation learners of the Scheduled Caste community. 2. It was found that the first generation learners had significantly more problems pertaining to finance, living conditions and employment in comparison to subsequent generation learners of the Scheduled Castes. 3. It was concluded that the first generation learners in comparison to the subsequent generation learners were more worried about social-psychological relations. It was also found that the first generation learners had more problems in comparison to subsequent generation learners in the areas related to adjustment to school work. 5. Most acute problems of the first generation learners of the Scheduled Castes were (i) employment during holidays, (ii) possibility of post-college education, (iii) home being away from the school, (iv) lack of facilities at home, (v) need for borrowing money, (vi) non-availability of time for play, (vii) desire to be popular, (viii) anxieties and worries of various kinds, (ix) curiosity about man's state after death, (x) no separate room for study at home, (xi) lack of training for any job, (xii) lack of guidance for career after passing their intermediate examination, (xiii) worry about the examination result and division to be obtained.

organization of integrated (I) components of various motivational factors in underachievers (UAs) and overachievers (OAs), (ii) to study the organization of total (U+I) motivational factors in UAs and OAs, (iii) to know the organizational difference between UAs and OAs with respect to 'I' or '(U+I)' organization, and (iv) to ascertain the extent of harmony between the motivational organizations of the two groups.

The investigation was a correlational study framed in ex-post facto design with two contrasting groups of under and overachievers. The sample of the study consisted of 700 regular male students who passed their B.A. examination as regular students of colleges situated within the jurisdiction of Avadh University and studying in M.A. (Previous) classes (in all subjects) of three colleges affiliated to the university. The sample was divided into two sub-samples—one for developing the regression equation and cross validation (300), and the other for the identification of UAs and OAs (400). Finally 103 UAs and 112 OAs were identified. The data were collected with the help of Mehrotra's Mixed Type Group Test of Intelligence, Hindi adaptation of Cattell *et al.* (1964), Motivational Analysis Test (MAT) by Kapoor and Singh (1980), and public examination marks. Thurstone's Centroid method of factorization, and Pearson's product-moment coefficient of correlation were the main statistical techniques used for analysing the data.

The findings of the study were: 1. Two factors were derived from correlation matrix of UAs at 'I' level. One factor was named the 'Motivation Factor'. The second factor operative in this group was labelled as the 'Self Debasing Factor'. 2. Only one factor was extracted for OAs at 'I' level. This was called the 'Self Promoting Motivation Factor'. 3. One factor was obtained for UAs at 'U+I' level. This factor was recognized as the 'Aggressive Assertion Factor'. 4. Two factors were found for OAs at 'U+I' level. One factor was called the 'Value Aspiration Factor'. The second factor was named the 'Benevolent Assertion Factor'. 5. The motivational organizations of the two contrasting groups were found to be opposite in nature. 6. The motivational organization of UAs was found to be significantly less harmonious than that of OAs.

985. SINGH, RAJESHWAR PRASAD, *Under and Over Academic Achievement and its Motivational Correlates (A Factor Analytic Study)*, Ph.D. Psy., Avadh U., 1983

986. SINGH, S., *Relationship of Home Environment, Need for Achievement and Academic Motivation with Academic Achievement*, Ph.D. Psy., Mag. U., 1984

The objectives of the present study were (i) to study the

The main aim of the study was to explore the relation-

ship of home environment, need for achievement and academic motivation with academic achievement. The hypotheses were: (1) Male students will obtain significantly higher scores on 'home environment' than female students. (2) Male students will obtain significantly lower scores on 'academic motivation' than female students. (3) There will be, statistically, no difference on n-Ach scores in male and female students. (4) Male students will perceive their father as more restrictive, more neglecting, and more rejecting as compared to female students. Female students will perceive their father to be more permissive, more loving and more protecting. (5) There shall be no difference in male and female students with regard to the perception of mother's behaviour. (6) Male students will be significantly lower in average academic performance than female students.

A sample of 300 class students (201 boys and 99 girls) was selected from seven schools of Barh subdivision in Patna district. McClelland's Thematic Apperception Test for Need Achievement, Academic Inventory, Ojha's Parental Attitude Scales and Problems Checklist (partly borrowed from Mooney's Checklist and partly devised) were used. The aggregate marks of two previous annual examinations were used as dependent variables. Mean, SD, intercorrelation analysis of variance, etc. were used.

The major findings were: 1. Aggregate marks were significantly and positively related to average marks and self-concept of academic ability. 2. Self-concept of academic ability was significantly and positively related to academic motivation. 3. Need for n-Ach as an operant was not related to any of the respondent's measures. 4. Sex differences were statistically effective in all the four areas of 'home environment'. Males had significantly higher mean score on school, economic, recreation and home problems. There were sex differences in respect of permissive, loving, protecting and rejecting behaviours of father; restrictive and rejecting behaviours of mother; and academic motivation. Boys, in general, perceived restrictive, neglecting, protecting and rejecting behaviours in father, whereas girls perceived permissive, loving, neglecting and rejecting behaviours in their mothers. Sex differences were unrelated to self-concept of academic ability and need for achievement motivation. 5. School differences were significant in the area of school, economic, and home problems of 'home environment'; restrictive, permissive, loving, protecting and rejecting behav-

iours of father; and restrictive behaviour of mother.

987. SINGH, A.D., *A Comparative Study of High and Low Academic Achievers in Self-concept Formation*, Ph.D. Edu., RDVV, 1983

The major objectives of the study were (i) to study the relationship between self-concept and academic achievement of male and female students of the 11th class, and (ii) to study the difference in the self-concept of high and low achievers.

The sample of the study consisted of 1524 students of class 11 (1094 urban and 430 rural), studying in different higher secondary schools of Jabalpur District. The self-concept of the students was measured by employing the Self-Concept Inventory by G.P. Sherry, R.P. Verma and P.K. Goswami, and the annual examination scores of the students in their 10th class examination were taken as a criterion of their academic achievement. Pearson's 'r', Critical ratio and t-values were computed to analyse the data.

The findings of the study were: 1. A positively significant relationship was found between self-concept and academic achievement of arts, science and commerce students. 2. The relationship between academic achievement and self-concept of art students studying in government schools was significantly higher than that of science, commerce and total students. 3. In general, there was a comparatively higher relationship between the self-concept and academic achievement of arts students than that of the students studying commerce or science subjects. 4. There was a significant difference in the self-concept of high and low academic achievers (in the favour of high achievers). This was true in both rural as well as urban, male and female students. 5. No significant difference was found in the self-concept of urban male and female high achievers. 6. Urban girls belonging to low academic achievement were found to have a better self-concept than their male counterparts. 7. Self-concept and academic achievement were significantly better in the case of female than of male students. 8. Government and non-government schools were at par in academic achievement, but the self-concept of the students of government schools was better than that of non-government schools. 9. Urban students had better academic achievement than rural students, whereas, they were at par in self-concept.

988. SONTAKEY, V.V., *A Comparative Study of Personality Factors and Achievement Motivation of High and Low Achievers in Natural and Biological Sciences*, Ph.D. Edu., Nag. U., 1986

The major objectives of the inquiry were (i) to study the personality factors associated with high and low achievers in natural science and biological sciences, (ii) to study the differences in personality characteristics of high and low achievers in natural and biological sciences when the effect of socio-economic status was controlled, (iii) to find out the predictive power of achievement motivation in predicting achievements in natural and biological sciences of students in relation to their socio-economic background, (iv) to find out the effect of interaction between sex, socio-economic status and achievement motivation on pupils' achievements in natural and biological sciences, (v) to study the relationship between the dynamics of personality and achievements in natural and biological sciences, and (vi) to develop multiple regression equations with scholastic achievement as dependent variable and personality factors, achievement motivation, intelligence and socio-economic status as independent variables for achievements in biological and natural sciences.

The sample comprised 482 boys and girls (251 high achievers and 231 low achievers) for the main study, 100 randomly selected subjects studying in class X for developing regression equations and 40 subjects for case study. The tools used were HSPQ (Form A), Gopal Rao's Achievement Motivation Test, the Achievement Motivation Test of Prayag Mehta, a Socio-Economic Index by the researcher and Raven's Progressive Matrices. A $2 \times 2 \times 2$ factorial design was adopted. t-test, multiple regression analysis were other devices used to examine the hypotheses and draw conclusions.

Some of the major findings were: 1. High achievers were more intelligent (factor B^+), less excitable (D^-), tough minded, self-reliant and realistic (I^-) than low achievers as groups (boys and girls taken together) in biological sciences. 2. High achievers were more intelligent (B^+), less excitable (D^-), undisciplined, having self-conflict ($Q3^-$) and relaxed, tranquil, unfrustrated ($Q4^-$) than low achievers in natural science. 3. The high achievers differed significantly from low achievers in factors B^+ , D^- and $Q3^+$ when socio-economic status was held constant. 3. The achievement motivation as measured by G. Rao's Achievement Motivation Test was a poor predictor of achievement in biological as well as natural sciences. 4. High achievers as groups

(boys and girls) came from higher socio-economic status background. Besides, high achievers and low achievers did not differ significantly on achievement motivation. 5. The socio-economic status and sex of the high achievers and low achievers did not interact with each other to bring about the differences in achievement motivation of the subjects. 6. The socio-economic status and achievement motivation had positive association with achievement in biological sciences as well as in natural sciences. 7. Personality factors were consistently associated with achievement in natural as well as biological sciences. Factors E^- , G^- , I^+ , $Q3^+$, $Q4^-$, and Neuroticism⁺ came out as predictors of achievement in biological sciences whereas E^+ , G^+ , I^- , $Q3^-$, $Q4^+$ and Neuroticism⁻ could predict achievement in natural sciences. 8. Adler's will to superiority, the principle of fixation of goals and style of life were confirmed because most of the high achievers formulated their respective courses of action according to their goals, 9. Murray's theory of personality of growth and development was supported by the data. 'No brain, no personality', and motivation principles were found potently operative to determine the behaviour of high and low achievers. 10. The education of mothers was found particularly operative in bringing about the high achievement. 11. The high achievers were charged with a high level of motivation to realize higher goals in their lives and they came from very high socio-economic status backgrounds and also from highly educated families.

Important educational implications are: (1) The most pertinent implication of the present study is regarding socio-economic status and achievement motivation. The subjects from highly educated parents set higher academic goals for themselves and thus are able to sustain a higher level of achievement motivation for longer intervals of time. This implies that school going youth coming from higher educational and occupational backgrounds have a better chance to be at the top so far as the scholastic achievement is concerned—the said achievement being the springboard for upward socio-economic mobility. It means that the prevailing type of education and present socio-economic status stratification of society are likely to accentuate and perpetuate the class and caste systems which are a hindrance to the realization of the goals of socialism, secularism and democracy. So school going youth coming from lower socio-economic and caste strata need special care from school systems. Besides the under-privileged youth may need superior ego ideals because none of the under-achievers were found to be identifying with their parents. (2) The fact that low achievers did not select high

goals in their lives betrays their lack of motivation. This lack of awareness and lack of motivation is attributable to the quality of life which prevails within their homes. The situation cannot be remedied insofar as the parents in general and mothers in particular are illiterate or just semi-educated. An adult education programme aimed at creating awareness among the parents with regard to education of their wards is urgently called for.

989. SRIVASTAVA, D.N., *Comparative Study of Academic Attainment of Smokers and Non-smokers with special reference to Their Adjustments and Anxiety*, Ph.D. Psy., Agra U., 1975

The hypotheses were: (1) Smoking, anxiety and adjustment separately influence academic attainment. (2) There is significant effect of interaction between smoking and anxiety; smoking and adjustment; anxiety and adjustment; and smoking, anxiety and adjustment on academic attainment of subjects.

The sample consisted of 300 male students from intermediate classes out of which 100 were habitual smokers, 100 light smokers and 100 non-smokers. Similarly there were 300 subjects from postgraduate classes in which 100 were habitual smokers, 100 light smokers and 100 non-smokers. It was selected with the help of multistage random sampling method. Data were collected with the help of the Sinha W-A self-analysis form (Anxiety Scale) in Hindi, the Adjustment Inventory in Hindi by V.K. Mittal, and an interview schedule developed by investigator. The data were analysed with the help of factorial design analysis of variance.

The findings were: 1. Smoking had significant negative relation to academic attainment in intermediate and postgraduate students of arts and science faculties. 2. Anxiety had a significant negative relation to academic attainment in intermediate and postgraduate students of arts and science faculties. 3. Adjustment had a significant positive relationship to academic attainment in intermediate and postgraduate students of arts and science faculties. 4. Among students of arts (intermediate and postgraduate) growth in age and educational maturity in case of those who had non-specific and generalized aptitude for an educational career, smoking, anxiety and adjustment were mutually independent, while influencing academic attainment. While among students of science, growth in age, educational maturity and goal consciousness in educational career affected slightly the mutual dependence of smoking,

anxiety and adjustment. 5. Among intermediate and postgraduate science students, disregarding intensity of smoking, low anxiety favoured academic attainment in comparison with high anxiety. 6. Among science students who were high anxiety ridden, low adjustment remained a better contributor to academic attainment than high adjustment. But among low anxiety subjects, high adjustment contributed more than low adjustment. 7. Among science students, high or low smokers showed better academic attainment when they had high adjustment. 8. Among the highly adjusted subjects, it was the low anxiety which contributed better to academic attainment whereas among the low adjusted subjects it was high anxiety which contributed better than low anxiety in respect of academic attainment. 9. Among lowly adjusted students of intermediate science, high anxiety favoured academic attainment only in non-smokers. Otherwise it was the low anxiety which was superior to high anxiety. 10. Among intermediate science students, subjects with low anxiety and with high adjustment were far better than others.

990. SRIVASTAVA, R.P., *An Investigation into the Relationship of Reading Ability with General Mental Ability, Socio-cultural Status and School Achievement*, Ph.D. Edu., JMI, 1984

The investigator formulated the following hypotheses for his study: (1) There is no significant relationship between various measures of reading ability and general mental ability. (2) There is no significant relationship between various measures of reading ability and socio-cultural status. (3) There is no significant relationships between various measures of reading ability and achievement in different school subjects. (4) Reading ability together with general mental ability and socio-cultural status does not contribute significantly to the variance in school achievement.

Four hundred and eighty students of class VII constituted the sample of the study. These students were selected from four types of schools—one government boys school, one government girls school, one private aided school and one public school. One hundred and twenty students were selected from each of these schools.

The tools used were Raven's Advance Progressive Matrices and Dabas's Socio-Cultural Status Scale to measure socio-cultural status of school children, and Reading Ability Tests. Reading ability was conceived of

as a composite ability having three components, viz., word meaning, reading speed and comprehension. Three separate tests related to each of these components were used. To test the word meaning, Tarang's Vocabulary Test was adapted; to test speed of reading and comprehension, two separate tests were developed by the investigator. The speed of reading test was based on a story divided into 22 parts or units. Each unit consisted of two or three sentences with a blank in the last sentence to be completed by one of the four words given below in the unit. The reading comprehension test consisted of three separate parts, i.e. reading for main idea and details, reading for inference, and reading for general significance. They represented three levels of comprehension, viz. literal, interpretative and critical. t-test was used for hypothesis testing.

The major findings of the study were: 1. The correlation of socio-cultural status with intelligence, various measures of reading ability and different areas of school achievement had by and large been insignificant, and whenever it was found to be significant the size of correlations tended to be small. 2. The correlation of intelligence with various measures of reading ability, and the achievement in different school subjects, ignoring few exceptions, was positive, significant and fair sized. The median correlation of intelligence with the measures of reading ability was 0.343 and with school achievement it was 0.324. 3. The correlation amongst various measures of reading ability as well as its relationship with school achievement but for one exception, were positive and significant. The median correlation among different measures of reading ability was 0.549 and of different measures of reading ability with measures of school achievement was 0.504. 4. A positive and significant correlation was found between measures of reading comprehension and various measures of school achievement with a median ($r=0.549$). The highest correlation were found between comprehension, i.e. reading for main idea and details and different measures of school achievement with a median being at $r=0.571$. 5. Comprehension was found to be the most significant contributor to school achievement in almost all the four subjects (Hindi, social studies, science and mathematics) in all the four schools. Word meaning was a significant contributor to the achievement in social studies and science in the three schools and to achievement in Hindi in one school. Intelligence and socio-cultural status contributed significantly to the variance in mathematics achievement in the case of three schools and socio-cultural status in Hindi achievement in the case of one school.

*991. SULTANA, S., *A Study of School Achievement among Adolescent Children with Working and Non-Working Mothers*, Ph.D. Edu., Kur. U., 1988

The objective of the study was to find answers to the following questions: (i) Is there any difference in scholastic achievement among children of educated working and educated non-working mothers? (ii) Is there any difference in scholastic achievement among children of educated working and educated non-working mothers, studying in English medium and Hindi medium schools?

A sample of 250 students of class X was selected randomly taking care that an equal number of students was selected in each maternal-employed and maternal-unemployed group. Further, 100 sample subjects whose mothers were working were from English medium and 150 sample subjects whose mothers were working were from Hindi medium schools. The scholastic achievement of these students was tested on standardized achievement tests in English, mathematics, social studies and languages. The combined scores on these four tests was considered as scholastic achievement of a student.

The findings of the study were: 1. There was no difference in the achievement in English, social studies, and languages among children of working and non-working mothers. 2. There was a significant difference in achievement in mathematics among children of working and non-working mothers. The children of non-working mothers achieved more than those of working mothers. 3. There was no difference in academic achievement among children of working and non-working mothers, studying in English or Hindi medium schools.

*992. SUTHAR, J.N., *An Investigation into the Effect of Caste, Effectiveness, Responsibility and Sex of the Primary School Teachers upon the Pupils' Achievement*, Ph.D. Edu. SPU, 1987

The objectives of the study were (i) to adopt a tool to measure the teacher effectiveness and to find out its reliability coefficient, (ii) to measure the teacher effectiveness of primary school teachers, (iii) to compare the score of high effectiveness (E+) of the teachers of different categories, (iv) to compare the score of low effectiveness (E-) of the teachers of different categories.

(v) to adopt a tool to measure the responsibility of the teacher for academic successes and failures of the pupils and to find out its reliability coefficient, (vi) to measure the responsibility of primary school teachers teaching in classes V, VI and VII, (vii) to compare the composite score of responsibility measures (R) of the teachers of different categories, (viii) to compare the score of high responsibility measures (R+) of the teachers of different categories, (ix) to compare the score of low responsibility measures (R-) of the teachers of different categories, (x) to study the effect of caste, effectiveness, responsibility and sex of the teachers upon pupils' achievement.

For measuring teacher effectiveness of primary school teachers the investigator adopted a tool standardized by Pramod Kumar and Mutha, and for measuring responsibility the tool standardized by Thomas R. Guskey was adopted. The reliability established by the test-retest method for teacher effectiveness scale was 0.78 and for responsibility scale it was 0.80. For achievement the annual examination marks were collected and converted into a percentage. The $2 \times 2 \times 2 \times 3$ & $2 \times 2 \times 2 \times 2 \times 3$ factorial designs were used. In each cell there were eight observations and hence data from 192 and 384 students were collected. Analysis of variance was used for verifying the hypotheses.

The major findings of the study were: 1. The non-backward class teachers were more effective than the backward class teachers. 2. The male teachers were more effective than the female teachers. 3. The more experienced teachers were found more effective than the less experienced teachers. 4. The teachers of grade VI were found to be more effective than the teachers for grades V and VII for high effectiveness scores. The teachers for grade VII proved to be more effective than teachers for grades V and VI for low effectiveness scores. 5. Out of 18 interactions only one turned out to be significant at .05 level in first order interactions and it was caste \times experience. The second order and third order interactions were not significant. This was for high effectiveness scores. 6. For low effectiveness scores, out of 18 interactions not a single one turned out to be significant. 7. The caste of the teacher was not a factor that influenced responsibility of the teacher. 8. Sex of the teacher was not a factor that influenced the responsibility of the teacher. 9. The experience significantly influenced responsibility of a teacher. 10. The grade of the teachers in which they were teaching affected their responsibility. For high responsibility scores it was found that the teachers of the fifth grade were more

responsible than the teachers of the sixth grade and the teachers of the sixth grade were more responsible than teachers of the seventh grade. 11. Out of 18 interactions, two turned out to be significant at .01 level in first order interactions and in second order interactions two turned out to be significant at .01 level. The third order interactions were not significant. The interactions that were significant were caste \times experience, sex \times grade, caste \times sex \times experience, and sex \times experience \times grade. 12. For high responsibility scores the interactions that were significant were sex \times grade, caste \times sex \times experience, sex \times experience \times grade, and caste \times experience \times grade. For low responsibility scores the significant interactions were caste \times grade, sex \times experience, caste \times sex \times experience, caste \times sex \times grade, and sex \times experience \times grade. 13. The caste of the teachers did not have any effect on pupils' achievement. 14. Male teachers were found to be more effective than female teachers. 15. The responsibility of the teachers had no effect on pupils' achievement. 16. The pupils studying under high effective teachers had achieved more than pupils studying under low effective teachers. The grade of the teachers had no significant effect on pupils' achievement scores.

993. SWEEN, *Academic Achievement of High School Students in Relation to the Instructional Design, Intelligence, Self-concept and n-Achievement*, Ph.D. Edu., Pan. U., 1984

The objectives of the inquiry were (i) to study the effectiveness of instructional design on students' performance, (ii) to find out the impact of self-concept on students' performance, (iii) to investigate the effect of intelligence on performance of students, (iv) to ascertain the effect of n-achievement on students' performance, and (v) to study the interaction effects of instructional design, intelligence, self-concept and n-achievement on performance of pupils in various combinations, viz. double, triple and quadruple.

Initially a sample of 1401 students was randomly selected from 25 schools of Chandigarh city. They were administered the following tools: (i) the Jalota General Mental Ability Test (1972); (ii) the Mehta Achievement Value and Anxiety Inventory (1969); and (iii) the Deo Personality Word List (1963). On the basis of scores on these tests, the students were categorized into eight different categories formed by different treatment combinations of high and low levels of intelligence, self-

concept and n-Achievement. On the basis of these combinations the final sample consisted of 192 students having 12 students in each category. Thus there were four independent variables, viz., instructional design, intelligence, self-concept and n-Achievement, employing four way ($2 \times 2 \times 2 \times 2$) factorial design in the study. Performance of students on the criterion referenced test was studied as a dependent variable. Like the other three variables, the instructional design also varied in two ways, viz. programmed text and adjunct programmed text. The data were analysed with the help of four way ($2 \times 2 \times 2 \times 2$) design of analysis of variance.

The findings of the study were: 1. The two levels of instructional design, viz. programmed instruction and adjunct programming differed in their effectiveness with respect to mean gain scores. Programmed instruction was found to be more effective than adjunct programming. 2. High intelligent students scored significantly better than low intelligent students. 3. Students with high self-concept achieved significantly higher scores than those with low self-concept. 4. High achievement motivated students gained significantly more than low achievement motivated students. 5. Instructional design did not interact with either self-concept or n-achievement or intelligence of students to cause any variance in their performance. 6. Intelligence interacted significantly with n-achievement to affect the mean gain scores of students on the criterion test. The difference between the two groups of intelligence of high achievement motivated students was significantly more than the difference between the same groups of low achievement motivated students. 7. The factor of intelligence interacted with both high and low self-concept to produce a significant difference in mean gain scores of the students. However, the variable of self-concept interacted with only high level of intelligence to produce statistically significant results. 8. The variable of n-achievement interacted significantly with the factor of self-concept to affect the performance of students. The students, high both on n-achievement and self-concept, performed significantly better than those low on both these variables. 9. The three-way interaction between n-achievement, intelligence and self-concept showed a significant F-ratio. 10. The interaction between the variables of n-achievement and instructional design was independent of the variable of self-concept. 11. Instructional design, intelligence and self-concept did not interact with each other in a three-way interaction to produce significant variance in the mean gain scores. 12. A perusal of four-way interaction between

instructional design, n-achievement, intelligence, and self-concept showed a non-significant F-ratio.

994. THAKUR, T., *The Academic Achievement of High School Boys, A Study*, SIE, Assam, 1974

The main purpose of the study was to find out how far the school had been able to help the boys to keep up their level of achievement throughout their high school career, and how far the school had been able to help the boys to develop their intellectual capacity as revealed by their ability and aptitude.

The best higher secondary school in Jorhat town was selected on the basis of certain criteria. Class VIII of 1972 with its three sections was chosen and academic achievement was studied through the years 1968, 1969, 1970 and 1971. The class passed through six examinations. The sample (N= 97) had been controlled to eliminate the effect of the diverse factors on the total achievement. Those who were regular in attendance and examinations were studied. Four groups (like and do not like the subject, and find the subject easy/difficult) were formed and their performance through the six tests was analysed. A questionnaire was used to collect personal data and the ability and aptitude of the students for a particular subject. The relationship between the students' ability and aptitude for school subjects was studied by applying tetrachoric correlation and t-test was used to find out the significance of difference between the means.

The major conclusions of the study were : 1. Academic achievement as a whole was not quite satisfactory. 2. In language there had been satisfactory progress of all the groups, but mathematics presented an unsatisfactory picture. A downward trend of the achievement was observed. 3. Boys with less aptitude for a particular subject failed to achieve satisfactorily in that subject. Those who had aptitude but disliked a subject did not show significant achievement. 4. Students who liked a subject, found it easy. Some found the subjects difficult though they liked the subjects. 5. None of the groups gained in the subject through three years of teaching. 6. There was a positive correlation between aptitude and ability in mathematics.

995. TIWARI, G.N., *Study Habits and Scholastic Performance at Three Levels of Education*, Ph.D. Psy., BHU, 1982

This study was undertaken to find out (i) if study habits

differed from one level of education to another, (ii) if they were related to scholastic performance and, if there was a relationship, how did they vary with the level, and (iii) if they were related to sex, age and urban/rural background of students, socio-economic status of the family, especially its three determining components, viz. parental education, parental occupation and family income. These objectives were translated into a number of research hypotheses for the purpose of investigation.

The random sample was selected from different types of institutions in Varanasi region. In all, the sample was formed of 1050 students of classes X, XII, and second year degree courses consisting of boys and girls from urban and rural institutions pursuing courses in arts, sciences, commerce and agriculture. The test for Study Habits and Attitudes by Joshi and Pandey was the main tool used. Socio-economic status was assessed by using an available scale. Scholastic performance was obtained from the marks awarded in school examinations. Besides this, different subject teachers rated the students for mental ability, progress in the classroom, attendance, regularity in homework and capacity for hard work, and these ratings were pooled. Besides these tools, a personal data sheet provided the data regarding age, income, etc.

From the analysis of data, the findings were as follows: 1. The class X students had the highest mean study habit score, significantly different from the students at the other two levels. 2. Science students in every class scored higher than students in the other courses. 3. In most of the cases the differences were in favour of the class X group of students when different courses were compared. 4. Students of science scored the highest in all the six measures of the Study Habits Inventory. This was the case at all levels. 5. Girls in all classes and in arts and science courses had better study habits than boys. Girls excelled boys in various components of the Study Habits Inventory also at classes X, XII and XIV, the only exceptions being that for boys in element A in XII and in element F at XIV levels of education. 6. Urban students (excepting at XII) had better study habits than rural students (this difference existing amongst both sexes) and the sex difference in favour of girls could be seen amongst rural as well as urban students. 7. Study habits scores were found to consistently rise with the rise in income and with rise in the level of parents' education. These were higher in the case of students whose fathers were in service. 8. Study habits scores positively and significantly correlated with annual examination

marks as well as with pooled teacher ratings. 9. Cluster analysis revealed that while attitude to study habits was an important component, the amount of time for study became a significant factor in the two higher stages.

The main recommendations arising from the findings were: (1) A continuous process of giving assignments and homework should be adopted for inculcating proper study habits in arts and commerce subjects students as in science and agriculture. (2) Schools should organize study outside school hours for taking advantage of library facilities, etc.

***996.** TRIPATHI, P., *A Comparative Study of the Correlates of Academic Attainment of Pupils of Junior High School*, Ph.D. Edu., Avadh U., 1987

The aims of the study were (i) to make a comparative study of the average scores of the students (belonging to rural and urban institutions managed by various agencies) in three selected correlates, i.e. intelligence (Int), socio-economic status (SES), and educational facilities (EF), (ii) to make a comparative study of the academic attainment of students in four main subjects, i.e. Hindi, social studies, science and mathematics, (iii) to determine the degree of relationship between the scores of the achievement test in the main subjects and the main correlates selected, and (iv) to estimate the amount of contribution made by the above correlates to the success of students in the above test, at the junior high school level.

The sample of the study consisted of 1200 students (900 boys and 300 girls) of class VIII selected from junior high schools of rural as well as urban areas of three districts of eastern U.P., using suitable sampling technique. The data were collected with the help of (i) a Group Test of Intelligence for children by Tandon (1971), (ii) four Achievement Tests of Hindi, social studies, science, and mathematics, (iii) a Check-list, (iv) a Questionnaire on Socio-economic and Cultural Status, and (v) a Questionnaire on Educational Facilities. Mean, SD, percentile, product moment correlation, regression coefficient, and multiple correlation coefficient, were used for analysing the data.

The findings of the study were: 1. The average level of scores in all the selected correlates (Int, SES and EF) and academic attainment were found to be low. 2. Girls were of high SES background. 3. Boys had better scores in the Int test and EF questionnaire. Boys has also shown superiority in academic attainment. 4. Urban

boys and girls had generally secured better Int scores. Boys belonging to institutions managed by private agencies has secured better marks in the Int test than boys of institutions managed by local self government. 5. Urban girls of private institutions had secured better scores in SES than rural girls of institutions managed by local self government. 6. Boys and girls of urban areas appeared to be having better EF than the pupils in rural areas. Boys of privately managed institutions appeared to have better EF than the boys of local self government institutions. 7. Urban boys of private institutions had secured comparatively better scores in achievement test than their rural counterparts. Boys had secured better scores in all the four selected subjects. Urban boys and girls had secured higher marks in social studies, science, and mathematics than their rural counterparts. Urban girls had secured better marks in Hindi and mathematics than their rural counterparts. Boys and girls of privately managed institutions had secured better marks in science than their local self government counterparts. 8. All the three correlates had a significant positive relationship with academic attainment. 9. The regression coefficients revealed that SES had EF and made a remarkable contribution to the academic success of both boys and girls.

997. TRIVEDI, V., *A Study of the Relationship of Parental Attitude, Socio-economic Background and Feeling of Security among the Intermediate Students and their Academic Achievement*, Ph.D. Edu., Luc. U., 1987

The investigation was designed to study the relationship between parental attitude, socio-economic status, feeling of security-insecurity and academic achievement of intermediate students with intelligence held constant. An attempt was also made to study the relationship between parental attitude, socio-economic status and feeling of security-insecurity and the relationship between parental attitude, feeling of security-insecurity and intelligence.

The sample for the study consisted of 523 girls studying in 11 intermediate colleges in Lucknow. Kuppaswamy's Socio-economic Status Scale was used for assessment of socio-economic status of the families of the students. Jalota's Group General Mental Ability Test was administered for measurement of intelligence. Sherry and Sinha's Family Relationship Inventory was administered to get an idea about the attitude of the

parents. Tewari and Singh's Security-Insecurity Inventory was used for measurement of feeling of security-insecurity.

The main findings of the study were: 1. There was significant relationship between academic achievement and parental attitude and socio-economic status. 2. Students with parental acceptance showed better academic achievement than those of the parental concentration or avoidance groups. 3. Students belonging to upper socio-economic classes showed better academic achievement than students in lower socio-economic status groups. 4. There was no significant relationship between the feeling of security-insecurity and academic achievement. 5. Parental attitude was significantly related to feeling of security-insecurity and socio-economic status. 6. There was no significant relationship between feeling of security-insecurity and socio-economic status.

- *998. UPADHYAYA, P., *In-depth Study of the Background Factors in respect of Selected Schools Showing Consistently Good and Poor Results at the High School Board Examinations for the Last Five Years*, D.Phil, Edu., All. U., 1986

The objectives of the study were (i) to determine the background factors that affected academic performance of the students in selected schools, (ii) to determine the casual flow of background factors affecting the academic performance of students, (iii) to estimate the total effects of background factors affecting the academic performance of students directly and indirectly.

In order to attain the aforesaid objectives, the 'path analysis framework' was used as a strategy. The study was basically an effort to set up a tentative 'Path Model' which was to be tried out on the empirical data. For developing a 'Path Model', constituent variables were identified and measured. The relevant hypotheses were formulated and tested with reference to the variables embedded in the model. The total number of selected schools (showing consistently good results and consistently poor results) for in-depth study was eight, the number of student respondents was 1260 and the number of teacher respondents was 119. The tools used in the present study were Raven's Progressive Matrices, the SES Scale, School Environment Inventory, Home Environment Inventory, Home Organizational Climate Questionnaire, Teacher Schedule Questionnaire, Minnesota Teacher Attitude Inventory (Hindi version), and School Schedule Proforma.

When Model I and Model II of the present study were actually applied on the data on the basis of *post facto* inspection of empirical findings, the following conclusions were drawn: 1. Better results in consistently good results girls schools (CGRG) and consistently good results boys schools (CGRB) schools were only due to number of variables that were actively functioning to affect academic performance of students positively. 2. In both types of schools, SES variables directly affected the academic performance. In the boys schools, its effect was reduced through intervening home (HEV) and school environment (SEV) variables while in the case of girls schools, positive effects of SES were enhanced through parental values, parental education and cognitive encouragement in school. Control did not play any meaningful role in good results. Creative stimulation in the boys schools and cognitive encouragement in the girls schools contributed significantly to academic performance. 3. Poor results in CPRG (consistently poor results girls schools) and CPRB (consistently poor results boys schools) were due to a network of large number of existing and functioning variables, which enhanced the strong positive effects of poor SES level of students. Poor results were due to strong effects of low SES through poor home environment and unfavourable school environment conditions. 4. Extracting from the overall conclusions regarding the variables embedded in loop I of the Model I, it could be finally stated that the spiral effects of the variables were found distinct and opposite in the two types of schools CGRS (consistently good results schools) teachers and CPRS (consistently poor results schools) teachers. 5. In CGRC, effects of high SES were enhanced through the effects of home environment and school environment variables, while in CGRB, effects of high SES decreased through the intervening home and school environment variables. The amount of decrease was as small as to be overcome by the strong effect of high socio-economic status. As a whole, in these schools, positive spiral effects were found. 6. In CPRS (boys and girls both), effects of poor SES were enhanced through the effects of poor home environment and school environment variables and finally gave poor academic performance. The picture revealed that the enhancement was in the negative direction. In this way, spiral effects were found to be negative in poor performing schools. 7. Better results in CGRS were due to the functions of humanized thrust and control in the organizational climate of the school through better academic qualification and attitude of teachers. Age of the teacher did not matter in good

school while in CPRS, poor results were due to absence of function of humanized thrust and control and the lack of correct teaching attitudes among teachers. Other organizational climate variables functioned in the similar manner in both types of schools. 8. By inspecting the empirical findings regarding variables existing and functioning in loop I (student population) and loop II (teacher population) of the model, it was concluded that the relative scores of primary total paths in total path structure of both the loops of the general model of the study revealed that loop II (teacher and school organizational climate together) did not overcome the limitations imposed by loop I (low SES, poor home environment and poor school environment as perceived by students), rather it intensified them. 9. Inspecting loop II of the model for CGRS and CPRS, it was concluded that loop II in CGRS showed a positive spiral effect while in CPRS, it showed a negative spiral effect. 10. Finally, it was concluded that loop I and loop II, individually and in combination, generated a positive spiral effect in CGRS and a negative spiral effect in CPRS.

999. UPADHYAYA, S.N., *Analysis of Classroom Environments in Tribal Setting with a view to Study its Effect on Learning and Attainment*, Dept. of Psychology, RSU, 1984 (NCERT financed)

Some of the objectives were (i) to assess the three aspects of classroom environment (interpersonal relationship, goal orientation, and system maintenance and change) in nine different dimensions, and (ii) to find out whether learning and attainment were differently correlated with the areas of environment and the nine different dimensions.

Individual and group testing was done. As the mean differences between the three major aspects and nine dimensions of classroom environment were not significant, the classes were merged and treated as one. In the tribal population of Bastar District in Madhya Pradesh, the study was limited to the student population; since academic achievement was one of the indices used, the study was limited to class VIII students as a standardized achievement test was available for the class. Of the eight tehsils in Bastar, five were included; ten schools from each tehsil were selected so as to represent habitations in different areas. As there were not more than 20 students in each class, all the students in each class were tested. The schools included both middle and higher secondary schools. The Classroom Environment Scale de-

veloped by Moos and Trickett was used. The 90 items in the scale represent nine dimensions of the classroom environment, namely, involvement, affiliation, teacher support, task orientation, competition, order and organisation, rule clarity, teacher control, and innovation; further, groups of dimensions provided scores for the three major areas, interpersonal relationship, goal orientation, and system maintenance and change. The Hindi version of the test was prepared by the researcher. The standardized achievement test included all the subjects prescribed for class VIII by the Madhya Pradesh Madhyamik Shiksha Mandal. Learning was tested by a list of 15 meaningless words wherein each word had three consonant letters in random sequence. As the marks obtained by students at the end of class VII were not available in the school nor with the students, marks obtained at one or other assessment in class VIII were used.

Some of the major findings were: 1. Each of three aspects of classroom environment—interpersonal relationship, goal orientation, and system maintenance and change, was significantly correlated to academic achievement. 2. Of the three dimensions comprising interpersonal relationship, while involvement and affiliation were positively correlated with achievement, teacher support was not. 3. Task orientation and competition, the two dimensions of the aspect-goal orientation, were highly correlated with academic achievement. 4. Order and organization, a dimension of system maintenance, which implied polite and orderly student behaviour in the classroom as well as out of class activities were not related to academic achievement. 5. The only dimension negatively correlated with academic achievement was rule clarity, a dimension of system maintenance. 6. Teacher control signifying the strictness of the teacher in implementing and enforcing rules and magnitude of punishment on violation of rules was positively correlated with academic achievement. 7. Change in the school system was negatively correlated with academic achievement. 8. There was no relationship between examination marks and classroom environment except as regards goal orientation; however competition was not related to the examination marks. 9. Though the major aspect, interpersonal relationship, was related to learning, its three dimensions taken separately were not. 10. Goal orientation was correlated with learning, so also competition, but not task orientation. 11. The classroom environment represented by maintenance and change of the system was not correlated with learning efficiency; its dimensions—rule clarity

and teacher control, were positively correlated with learning efficiency, while the innovation dimension of this aspect, revealed a negative though not significant relationship.

1000. VERMA, M., *Factors Affecting Academic Achievement: A Cross-Cultural Study of Tribal and Non-tribal Students at Junior High School Level in Uttar Pradesh*, Ph.D. Edu., Avadh U., 1985

The study was designed to find out whether students from the Scheduled Tribes differed from the students belonging to Scheduled Castes with respect to academic achievement, attitude towards school, attitude towards medium of instruction, socio-economic status, self-concept and adjustment in school.

The sample consisted of 1049 randomly selected junior high school students of which 557 belonged to Scheduled Tribes, 63 belonged to Scheduled Castes and 429 were from other castes. Aggregate marks in the junior high school examination were taken as the criterion of academic achievement. The Hindi translation of Kevin Marjoribank's Scale was used for measurement of attitude towards school. An attitude scale devised by the researcher was used for measurement of attitude towards medium of instruction. Pareek and Trivedi's Scale was used for measurement of socio-economic status of the pupil's family. The Hindi translation of Peers-Harris Children's Self-concept Inventory was used for measurement of self-concept and Bhagia's Adjustment Inventory was used for measurement of adjustment.

Some of the major findings were: 1. The mean achievement of the Scheduled Caste students was significantly lower than that of tribal students and students from the other castes. However, there was no significant difference in the mean achievement of students belonging to the Scheduled Tribes and those belonging to other castes. 2. Students from higher castes had a more favourable attitude towards the school when compared to students from the Scheduled Tribes and Scheduled Castes. 3. Students from higher castes had a more favourable attitude towards the medium of instruction when compared to students from the Scheduled Tribes or Scheduled Castes. 4. Students from the Scheduled Tribes had a higher socio-economic status when compared to students from the Scheduled Castes or other castes. 5. There was no significant difference between tribal and other caste students as regards self-concept.

6. The mean school adjustment score of the tribal group was significantly poorer than that of the non-tribal group. However, there was no significant difference between the mean adjustment score of the Scheduled Caste students and other groups.

1001. VIMLA, *A Study of Track Performance of Secondary School Students in relation to Achievement Motivation, Socio-economic Status and School Adjustment*, Ph.D. Phy. Edu., Kur. U., 1985

The objectives of the study were (i) to study the achievement motivation of track school athletes participating in different track events, (ii) to find out the school adjustment of athletes participating in track events, (iii) to work out the socio-economic status of athletes participating in track events, (iv) to find out the performance of athletes in their respective track events, (v) to know the relationship of achievement motivation, socio-economic status and school adjustment levels of track athletes to their performance in track events, (vi) to find out the difference between performance of high and low achievement-motivation, socio-economic status and school adjustment groups separately, and (vii) to find out the combined effect of achievement motivation, socio-economic status and school adjustment on performance in track events.

Sample of the study consisted of a group of 430 male secondary athletes who were expected to participate in zonal and inter-zonal competitions of a school athletic meet of Delhi State. They were administered the following tools: (i) Rao's Achievement Motivation Test, (ii) the Srivastava Socio-Economic Status Scale, and (iii) the Bhagia School Adjustment Inventory. Performance in track events was measured through time and distance covered.

The findings of the study were: 1. There was a significant and negative relationship between socio-economic status scores and performance scores in track events (100 and 400 metre races). 2. There was a significant difference the mean track performance scores of high socio-economic status and low socio-economic status track athletes. Low socio-economic status athletes had high performance in track events as compared to high socio-economic status athletes. 3. There was a highly significant and positive relationship between achievement motivation scores of track athletes and their performance scores. 4. There was significant difference in performance in track events between athletes having

high and low achievement motivation. The high achievement motivation athletes had high performance in track events. 5. There was a high and positive relationship between school adjustment and performance in track events. 6. There was significant mean difference in performance in track events of high and low adjusted athletes in school situations. 7. The high adjusted athletes in school situations had higher performance in track events than their less adjusted counterparts. 8. Socio-economic status, achievement motivation and school adjustment factors played a significant role in determining the performance in track events of athletes. These factors could predict the performance in track events, especially the 100 metre and 400 metre races.

1002. VIRMANI, K.G., *Leadership Styles and Cognitive Ability Antecedents as Performance Correlates of Educational Leaders—Focus on Heads of Schools*, Ph.D. Soc. Sc., IIT, Del., 1984

The objectives of the study were (i) to know whether leader traits were the 'cause' of leader styles and whether these in turn were the 'cause' of leader performance both of the quantitative and qualitative kind, and (ii) to explore the possibility of existence of a new cognitive trait related with leadership processes sensitivity, which made leaders effective. The basic hypotheses formulated were: (1) Basic style/Style flexibility/Style adaptability/Two style profiles (based on the Tridimensional Leadership Effectiveness Model of Hersey and Blanchard) of heads of schools will be related to the pass percentage/first divisioners percentage of students of their schools passing out on the Board examination. (2) Intelligence/Creativity/Leadership processes sensitivity ability (in Hindi—*vivek*)/Humour/Supervisory ability of heads of schools will be related to their basic style/style flexibility/style adaptability/two style profiles. (3) Intelligence/Creativity/*vivek*/Humour/Supervisory ability of heads of schools will be related to pass percentage/first divisioners percentage of their students passing out of the Board examination.

The sample consisted of 170 respondents which included 85 heads of schools (principals of secondary/senior secondary government schools for boys and girls) taken as educational leaders from the Union Territory of Delhi and 85 heads of schools (headmasters of more or less urban high schools for boys and girls) from the Union Territory of Goa, Daman and Diu. The tools

used were: (i) Hersey and Blanchard's LEAD (self) Questionnaire for measuring managerial leaders' basic style, style flexibility, style adaptability and two style profiles. (ii) Ghiselli's Self Description Inventory for measuring managerial leaders' intelligence, need for self actualization as a measure of creativity and supervisory ability. (iii) A specially designed V-Questionnaire for measuring Leadership Processes Sensitivity Ability (*vivek*). (iv) The George Washington University Test of Social Intelligence containing the sub-test on sense of humour. (v) Board examinations' results as measures of performance. Chi-square test of independence and suitable tests of statistical significance were used to derive conclusions.

The major findings were: 1. The basic style of heads of schools was not related to pass percentage/first divisioners percentage of students of their schools passing out of the Board examination. 2. Style flexibility of heads of schools was related to pass percentage of students of their schools passing out of the Board examination. 3. Style flexibility of heads of schools was not related to first divisioners percentage of students of their schools passing out of the Board examination. 4. Style adaptability along with style flexibility of heads of schools were related to pass percentage of students of their schools. 5. Style adaptability of heads of schools was not related to pass percentage/first divisioners percentage of students of their schools passing out of the Board examination. 6. Two-style profiles along with style flexibility of heads of schools was related to pass percentage of students of their schools passing out of the Board examination. 7. Two-style profiles of heads of schools were not related to pass percentage/first divisioners percentage of students of their schools passing out of the Board examination. 8. Intelligence of heads of schools was related to their style flexibility. 9. Creativity of heads of schools was related to their style flexibility. 10. Intelligence, creativity, *vivek*, humour and supervisory ability of heads of schools were not related to their basic style. 11. *Vivek* of heads of schools was related to their style flexibility. 12. Humour and supervisory ability of heads of schools were not related to their style flexibility. 13. Humour of heads of schools was related to their style adaptability. 14. Intelligence, creativity, *vivek* and supervisory ability of heads of schools were not related to their style adaptability. 15. Intelligence, creativity, *vivek*, humour and supervisory ability of heads of schools were not related to their two-style profiles. 16. Supervisory ability of heads of schools was directly related to pass percentage of students of

their schools passing out of the Board examination. 17. Intelligence, creativity, *vivek* and humour of heads of schools were not directly related to the pass percentage of students of their schools passing out of the Board examination. 18. Intelligence, creativity, *vivek*, humour and supervisory ability of heads of schools were not directly related to first divisioners percentage of students of their school passing out of the Board examination.

*1003. WARSI, R.S.K., *An Experimental Study of Students' Perception of Teachers as a Function of Educational Level, Academic Achievement and School Background of Students*, Ph.D. Edu., Kum. U., 1987

The study was designed to measure the effect of school background, educational level and academic achievement on students' perception of teachers.

Sampling was done in two stages. In the first stage 150 students of class VIII, 138 students of class X and 129 students of class XII was selected from a public and a government school. At the second stage of sampling, on the basis of Q1 and Q3 values of aggregate percentage of marks of the students in the previous examination, 60 students from each class of the two schools were selected for the study, making a total sample of 360. A scale for the measurement of perception of perceived qualities of a successful teacher was devised by the investigator. It consisted of 16 broad categories of qualities of a successful teacher as perceived by the students with their rank order.

The main findings of the study were: 1. There was a significant effect of school background of the students on their perception of teachers. 2. There was a significant effect of educational level on students' perception of teachers. 3. There was no significant effect of academic achievement on students' perception of teachers. 4. There was a significant interactional effect of school background and educational level of students on their perception of teachers. 5. There was no significant interactional effect of school background and academic achievement on students' perception of teachers. 6. There was no significant interactional effect of educational level and academic achievement on students' perception of teachers. 7. There was no significant interactional effect of school background, educational level and academic achievement on students' perception of teachers.

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