

## Correlates of Achievement

### *A TREND REPORT*

C.L. ANAND

M.S. PADMA

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#### **Introduction**

Academic achievement is of paramount importance, particularly in the present socio-economic and cultural contexts. Obviously, in the school great emphasis is placed on achievement right from the beginning of formal education. The school has its own systematic hierarchy which is largely based on achievement and performance rather than ascription or quality. Thus, the school tends to emphasize achievement which facilitates, among other things, the process of role allocation for the social system. The school performs the function of selection and differentiation among students on the basis of their scholastic and other attainments and opens out avenues for advancement, again, primarily in terms of achievement.

The student at school is trained to accept the hierarchy based on achievement. This helps him to be released from the family status in certain ways. His personal status is inevitably a direct function of the position he achieves, mainly in the formal classroom setting. Acceptance of the system of hierarchy in terms of achievement helps also to integrate the school system insofar as there obtains a congruence between the values of a family and those of society.

A considerable number of students from school go to colleges and institutions of higher learning. It is very important to ensure that such students acquire the requisite competence so as to benefit most out of higher education. Setting the stage for the achievement of the youth is thus a fundamental obligation of the educational system at the school stage.

#### **Researches on Achievement**

The effectiveness of any educational system is gauged to the extent the pupils involved in the system achieve, whether it be in cognitive, conative or psychomotor domain. In general terms, achievement refers to the scholastic or academic achievement of the student at the end of an educational programme. It is to this concept that the term achievement is referred to here. To maximize the achievement within a given set-up is, therefore, the goal of every educationist — a teacher or an educational administrator. Research has come to our aid by looking into what variables — personal, home, school, teacher, etc., — promote achievement and what are deterrents to it. It has been thus indicated that a good number of variables, such as personality characteristics of the learners, the socio-economic status from which he hails, the organizational climate of the school, curriculum planning, etc., to mention a few, influence achievement in different degrees. These variables are generally referred to as correlates of achievement. Heads of institutions, curriculum planners, teachers, and others who are involved in the task of helping students to achieve better would like to have a knowledge of the extent of influence these correlates exert on achievement. Further, a synoptic view of the researches done would be of utmost importance to the educational researcher to enable him to explore greater depths in this rather important area of achievement.

#### **Classification of Studies**

The studies in this area were first classified by R.H.

Dave (1968) in the Third Indian Yearbook of Education (Educational Research). Though the studies comprised only seventeen pieces of research and included those at both M.Ed. and Ph.D. levels, the credit goes to the reviewer for his pioneering effort. The review indicated that the studies were undertaken to find out the relationship of achievement to various factors like sex, intelligence, physical health, socio-economic status, leisure-time activities and so on.

P.N. Dave (1974) developed a trend report based on forty-four studies. Out of these, thirty-three were Ph.D. theses submitted to various Indian universities and eleven projects undertaken or sponsored by the Ministry of Education, the National Council of Educational Research and Training, the Central Institute of Education, Delhi, the state institutes of education, universities and other institutions. The studies were classified under the sub-headings: correlates in general, personality correlates, socio-economic status, backwardness and failure, over-and under-achievement, and miscellaneous. The review identified some clear research trends. The researches seemed, by and large, to be extensive, developmental and trait-oriented, horizontal, based on concepts and methodology developed abroad, and post facto and psycho-social biased.

After a gap of five years, the studies added to this area in the intervening period were reviewed again and a trend of research drawn by Dave and Anand (1979). This was based on additional thirty-eight studies (thirty Ph.D. theses and eight research projects undertaken or sponsored by various institutions). The authors followed more or less the same classification of studies as done earlier by Dave (1974), the classified categories being correlates in general, socio-economic status, personality correlates, poor curriculum organization, over-and under-achievement and miscellaneous correlates of achievement.

The present trend report is based on the studies abstracted in the two earlier surveys (Buch, 1974; Buch, 1979) and additional sixty-five studies abstracted under the area in this volume. All the above-mentioned studies are taken into account for identifying the emerging trends. Obviously, this has been done with a view to presenting a comprehensive picture of the trends in the area of Correlates of Achievement over the period of time in Indian educational research.

The additional sixty-five studies abstracted include fifty doctoral theses and fifteen reports of projects. Considering the studies on hand and keeping in line with the earlier two trend reports, the classification presented in this report has retained four of the areas, namely, per-

sonality correlates, socio-economic status, over-and under-achiever, and miscellaneous, found in the earlier two trend reports and has opened up new areas. Thus the studies have been classified under the following heads: (i) personality correlates, (ii) creativity and achievement, (iii) affective correlates, (iv) socio-economic status and achievement, (v) Over-and under-achievers, (vi) achievement of SC/ST students, (vii) institutional characteristics and achievement, and (viii) miscellaneous. A picture of how the number of studies that have been put into different classifications over the three trend reports has changed is given in Table 1.

**Table 1**  
CLASSIFICATION OF STUDIES IN THE THREE TREND REPORTS

Sl. No.	Classification	First Survey	Second Survey	Third Survey
1.	Personality Correlates	4	12	16
2.	Socio-economic Status	2	9	6
3.	Over-and Under-achievement	7	14	13
4.	Backwardness and Failure	8	—	—
5.	Poor Curriculum Organization	—	6	—
6.	Affective Correlates	—	4	7
7.	Institutional Characteristics and Achievement	—	—	7
8.	Creativity and Achievement	—	—	4
9.	Achievement of SC/ST students	—	—	3
10.	Correlates in General	6	9	—
11.	Miscellaneous	17	8	11
Total Number of Studies		44	57*	67

Note\* This total may not tally with the column total as the studies may find their place under different classifications simultaneously according to the variables studied.

Before identifying and discussing the trend of research, a brief picture of the different researches from among the sixty-five falling under each head of classification may be worth while.

### Personality Correlates

One or other personality characteristics have time and again been found to be conducive to success in the academic field. But it is of greater concern to find out how they influence academic achievement and in what way. Studies which have tried to probe into the relationship of certain personality variables with achievement are those of Mukherjee (1969), Dharmi (1974), Bhushan and Ahuja (1977), Hussain (1977), Ravinder (1977), Sharma (1979), Singh and Kumar (1977), Goswami (1978), Shah (1978), Hom Chaudhury (1980), Shivappa (1980), Kumar (1981), Patel (1981), Gandhi (1982), Menon (1982), and Zachariah (1982).

Singh and Kumar (1977) and Bhushan and Ahuja (1977), while inquiring into the relationship of anxiety and achievement, came to the same conclusion. The former carried out their study on male graduate students measuring anxiety during their graduation and considering the previous examination marks as the index of achievement. The latter carried out their study on in-service teachers with a minimum of three years of experience, all pursuing M.Ed. through correspondence course. Both the studies found anxiety to have a negative relationship with achievement. Using the multivariate covariance adjustment method, Mukherjee (1969) demonstrated the importance of controlling the differences between the anxiety groups with regard to a number of ability and self-evaluation variables when prediction of academic achievement was to be made from non-intellectual factors. Ravinder (1977) used a variety of tools in his attempt to find out the effects of state-trait anxiety, psychological stress and intelligence on learning and academic achievement. The data were analysed using the statistical techniques of analysis of variance and factor analysis. The study found that general anxiety by itself had relatively little effect on academic achievement and that a combination of anxiety with intelligence considerably increased the accuracy of predicting academic performance. In his study involving pre-university students drawn from all colleges of Mizoram, Hom Chaudhuri (1980) inferred that three factors — self-concept, anxiety, and socio-economic status — came out as correlates of achievement. In yet another study using college students as sample, Hussain (1977) concluded that anxiety was found to bear a curvilinear relationship with academic achievement.

Though self-concept has been studied as one of the many variables in a number of investigations, Shah (1978) and Goswami (1978) studied it as a major variable and looked into its relationship with achievement. In a study financed by the Saurashtra University, Shah (1978) developed a self-concept inventory based on what he refers to as self-reporting technique. The study found a positive relationship between the two variables. Goswami (1978) also constructed a self-concept test for the purpose of the study and arrived at the same conclusion. Yet another study which also yielded a similar conclusion was that of Sharma (1979).

The study entitled *Factors Affecting the Academic Achievement of High School Pupils* by Shivappa (1980) revealed the potential of intelligence quotient, n-achievement, manifest anxiety, educational aspiration and study habits taken together in predicting academic achievement, the intelligence quotient contributing the

maximum while n-achievement making considerably good contribution to the prediction. In a similar study Dhami (1974) found that intelligence and emotional maturity contributed substantially to scholastic achievement. The study by Patel (1981) suggests that intelligence has an influence on scholastic performance. Menon (1982) looked into the performance of students belonging to two government-run polytechnics in Haryana. The investigator found that numerical ability, general mental ability, abstract reasoning, mechanical reasoning, academic achievement (at matriculation examination), and language usage (spelling) accounted for 38.23 per cent of the variance in performance in the first year examination of students at the polytechnics.

Gandhi (1982) investigated the relationship of academic achievement with affiliation motive, power motive, and achievement motive. Separate inventories were developed and standardized to measure the three motives. Affiliation motive was found to be significantly and negatively related to academic achievement in the case of boys only. Power motive and academic achievement were not found to be related. It was found that academic achievement was significantly affected by achievement motive at different (high, average, and low) levels.

There is a single study, by Kumar (1981), which considered the achievement of students through programmed instruction. The study was an experimental one. The researcher has suggested the suitability of different programming styles to have the optimal achievement in relation to the variables—general anxiety, extraversion, intelligence, and creativity.

Fantasy life of adolescent girls caught the attention of Zachariah (1982). The investigator developed a fantasy inventory and collected data on a large sample of adolescent girls in Kerala. The study found the relationship between the fantasy life and educational achievement to be significantly negative.

### **Creativity and Achievement**

Four researchers — Acharyulu (1978), Menon (1980) Vijayalakshmi (1980) and Singh (1982) — studied the relationship of creativity with achievement. Though these studies could have found a place under the classification of Personality Correlates, they have been classified separately to highlight the attention creativity is gradually drawing as a variable for finding out its relationship with the scholastic achievement of pupils. Acharyulu (1978) attempted to test for interactive effects of intelligence and creativity upon achievement in different



school subjects. A translated version of the Torrance Tests of Creative Thinking (both Verbal and Figural batteries) and Cattell's Culture Fair Intelligence Test were used to measure creativity and intelligence, respectively. The study used correlational and 7×3 factorial (fixed effects) ANOVA designs. Scheffe's Contrasts were also used for testing the hypotheses. The study found that the correlations between verbal creativity scores and school achievement were as high as those between intelligence and school achievement. Further, the study showed non-significant differences in achievement between the high-intelligence and high-verbal creativity groups despite significant differences in their intelligence and verbal creativity. The study of Menon (1980) revealed the correlations between creativity and achievement as 0.45, creativity and intelligence as 0.29, and intelligence and achievement as 0.24. Vijayalakshmi (1980) used Nair's Kerala University Test of Creative Thinking for measuring the creativity of secondary school students and established that the average academic achievement of high creatives was more than the average academic achievement of low creatives. She further demonstrated a significant difference between high creatives and low creatives in academic achievement. The study of Singh (1982) again showed that verbal, non-verbal, and total creative thinking variables had positive and significant relationship with academic achievement of high school boys and girls.

#### Affective Correlates

Researches which probed into the relationship of variables like attitudes, adjustment, values, etc., in relation to academic achievement have been considered under this classification.

Makhija (1973) inquired into the interaction among values, interests and intelligence and its impact on scholastic achievement. Analysis of variance of the data revealed that none of the values measured on Allport-Vernon-Lindzey Study of Values had any significant influence on scholastic achievement. The study has brought to focus the influence of various combinations of values and interests on achievement in different fields of studies. Another investigator, Zacharia (1977), also attempted to find out the effect of attitude and interest on achievement in social studies of pupils of tenth grade. A high correlation was found between pupils' achievement and their interest in social studies.

George (1966), Reddy (1978) and Soman (1977) concerned themselves with studying adjustment as a correlate of achievement. George (1966) attempted to draw a

comparative picture of pupils who had 10 years *vis-a-vis* 11 years of schooling, on their adjustment and achievement. In the longitudinal study by Reddy (1978) the students selected in Class VIII were followed up till they reached Class X. The study found academic adjustment significantly related to scholastic performance. Among other results, it is of significance to note that the attitude to self, learning, achievement, parents and teachers and peers was found to be positively related to academic adjustment and scholastic performance. Soman (1977) investigated the overlap of fourteen affective variables belonging to the basic personality dimension of adjustment with achievement in mathematics. Along with other statistical techniques the study employed factor analysis in treating the data. The study revealed that personal adjustment variables and anxiety variables had a considerable influence on achievement in mathematics with some exceptions for certain sub-samples. The dominant personality factor identified for the over-achievers was individual adjustment factor.

Students' home, health, social and emotional adjustment, students' study habits, and their attitude towards education figured as some of the non-intellectual correlates of academic achievement in a study by Chopra (1982). The study showed that academic achievement had a positive relationship with attitude towards education and also with the study habits of students. Further, home adjustment was found to be more closely related to academic achievement than emotional, health, and social adjustments. In the study of Pyari (1980) the relationship between family attachment scores and educational achievement scores was found to be negative and significant. Theoretical, aesthetic, social, and religious values were positively and significantly related with educational achievement, while economic and political values were negatively and significantly related.

#### Socio-economic Status and Achievement

Since the society in India, as elsewhere, consists of different classes, it is but natural for the researchers to think of the extent to which home conditions influence the scholastic achievement of children. These home conditions, which are generally nomenclatured as the socio-economic status (SES), may be further subdivided as father's occupation, mother's education, family income, and so on. Though researchers generally include SES as one of the variables in their studies, the studies which are presented below have considered only the relationship between SES and academic achievement as their foci.

Satyanandam (1969) highlighted two sub-aspects of

SES, namely, educational level of parents and economic status of parents. According to the researcher, the children of graduate parents performed far better than the children of matriculate parents. Children of upper and lower, and upper and middle economic strata only differed significantly on the variable of achievement. Chatterji *et al.* (1971) investigated the effect of parents' income—parents' education, family size, and general condition of the home upon scholastic achievement, controlling the level of intelligence. For all the intellectual ability groups the economic condition of the family and study room facility had no effect on the scholastic achievement. The family size and the number of siblings were inversely related, especially in low intellectual level. However, the study conclusively demonstrated parents' education as related to scholastic achievement. Again, Gupta (1982) found that birth order and father's profession influenced the reading ability (in Hindi) of children studying in Classes III and IV in primary schools of Patna. Involving students of Tamil Nadu Agricultural University, Singh and Venkatachalam (1976) found that students coming from unfavourable and most unfavourable socio-economic environmental groups were able to perform better under trimester system having built-in supervision and continuous evaluation. The result suggests that a better supervision, at least at the collegiate level, might compensate for poor SES. Salunke (1979) selected a sample from students at the collegiate level, drawn in this case, from four faculties of the M.S. University of Baroda. The study used a modified version of the Kuppaswamy's SES Scale to measure the SES of these students, while it developed questionnaires to measure home environment and economic management. Though SES was found unrelated to academic achievement, educational facilities and emotional happiness in the home were found to contribute positively to the pupil's performance in studies. Also, economic management was found related to academic achievement. Studying the relationship between socio-economic background and academic achievement of students of Classes VI, VII and VIII, Khanna (1980) established a significant and positive relationship between SES and academic achievement.

### Over- and Under-achievement

It is of extreme importance to educators in general, and teachers in particular, to know why some students achieve high while others achieve low in the same school environment. Are there any inherent characteristics in students which play a role in this discrimination? There

has been continuous research carried out in this area to delve into greater depths of the problem. Table 1 given earlier highlights this point.

Thirteen studies fall under this classification. They are of Menon (1972), Agarwal (1975), Jain (1975), Ghuman (1976), Iyer (1977), Patel and Joshi (1977), Koul (1978), D'Lima (1979), Joseph (1979), Nagpal (1979), Saun (1980), Somasundaran (1980), and Kulshrestha (1981). All these have attempted to compare over- and under-achievers on certain personality and other characteristics.

Jain (1975) found that bright achievers were characterized by better study habits and higher achievement motivation than the dull achievers. Agarwal (1975) who made a psycho-social study of academic under-achievers concluded that under-achievers were comparatively less emotionally mature, less calm, less placid, less prone to getting into difficulties, less able to face reality and possessing less ego strength than over-achievers. On comparison of values, over-achievers had stronger educational, social and humanistic values than under-achievers. On the other three values—materialistic, religious, and personal—the two groups were found to be almost alike.

Menon (1972) made a comparative study of over- and under-achievers of high ability on certain personality characteristics, motivational traits, interest areas, etc. Over-achieving groups of superior and general ability were found to be less extrovert and less maladjusted than under-achievers. The former also showed greater academic interest and endurance. Further, it was found that demographic factors and socio-economic status markedly influenced over- and under-achievement. Another study which again concentrated on patterns of achievement among bright students was of Kulshrestha (1981), who worked on a sample of science and mathematics students from colleges. The results brought forth the differences in the areas of vocational interests, certain personality characteristics, and some home factors for the differentially classified achievers in different subjects of study.

Three studies concentrated on under- or over-achievement in mathematics. Koul (1978) studied the differences on Murray's needs. Students belonging to high achieving group in mathematics, on an average, were found to be high on the scales of n-Order, n-Dominance, and n-Endurance and low on the scales of n-Exhibition, n-Succorance, n-Heterosexuality, and n-Aggression in comparison to low-achieving group. Low achievers in mathematics were found to be more exhibitory, succorant, heterosexual and aggressive. Both the

studies of Iyer (1977) and Somasundaran (1980) used the personality scales standardized by the Department of Education of the Kerala University. In the study of Iyer (1977) the personality variables — self-reliance, sense of personal freedom, feeling of belonging, withdrawing tendencies, nervous symptoms, social skills, school relations, community relations, general anxiety, and test anxiety — discriminated effectively between over-achievers and normal-achievers, normal achievers and under-achievers, and over-achievers and under-achievers in relation to achievement in mathematics. While in the study of Somasundaran (1980), personality variables of social standards, introversion, family relations, social skills, test anxiety, general anxiety, school relations, self-reliance, masculinity, antisocial tendencies (freedom from), and nervous symptoms (freedom from) discriminated between the unselected groups of over-achievers and under-achievers. Variables which discriminated between the unselected groups of normal and under-achievers were social standards, introversion, and family relations. In the case of equated groups, variables which showed significant discrimination between normal and under-achievers pertained to sense of personal worth, introversion, and social standards.

The lone study of Ghuman (1976) showed that over-achievers and under-achievers did not differ significantly on any of the variables, namely, aptitudes, achievement motivation, or personality traits. The study attributed over-achievement primarily to non-intellectual personality variables, and under-achievement to intellectual factors.

Nagpal (1979) made a study of non-intellectual characteristics of over- and under-achieving engineering students. The study revealed that academic adjustment was an important correlate of over- or under-achievement. Further, under-achievers reported a greater number of emotional problems typical to youth. Saun (1980) studied the patterns of self-disclosure and adjustment among high and low achievers. Male high and low achievers equally disclosed their self to others in all the eight dimensions of Self-Disclosure Inventory, namely, money, personality, study, body, interests, feeling ideas, vocation, and sex while among female high and low achievers, significant difference was found in self-disclosure in relation to five areas, namely, money, body, interests, feeling ideas, and sex. Regarding adjustment, male high achievers were found to be more adjusted than low achievers in the areas of home and health, while there was a significant difference between high- and low-achieving females in health, social, emotional, and educational areas of adjustment. In Patel and

Joshi's (1977) study, high achievers were found to have scored higher on family adjustment than low achievers. Also, the former were found to be better adjusted personally than the latter.

D'Lima (1979) made a study of different types of achievers among creatively and intellectually gifted pupils. It was found that the double-talented (creatively and intellectually gifted) group had a higher percentage of high achievers. An attempt to identify variables which would predict achievement in chemistry at pre-degree level was made by Joseph (1979). The variables like number series, formulation, spatial ability, verbal comprehension and interpretation, critical thinking, attitude towards science, science interest, personal adjustment, and social adjustment discriminated among the high, average, and low achievers.

#### **Achievement of Scheduled Caste/Scheduled Tribe Students**

Though there are a number of researches reporting the achievement of students in general, those which have focussed on the achievement of SC/ST students are barely three, namely, those of Rani (1980), Aruna (1981), and Shashidhar (1981). Two of these studies, both undertaken in 1981, happened to have been carried out in Karnataka, one using primary school students as its sample while the other the secondary school students. Shashidhar (1981) studied the relationship between certain school variables and the achievement of SC and ST secondary school students of Karnataka. The study used a pool of tools to get data. The variables openness of the school, teachers' attitude towards scheduled castes, and intelligence were found to be significantly related to the achievement of SC students. Rani (1980) drew the sample from the undergraduate engineering students belonging to five different institutions in India. The study brought out that academic achievement of the SC students was significantly lower than that of non-SC students. Aruna's (1981) study also reported similar results. However, achievement of the ST students was found to be higher than that of the SC students.

The above results focus on the importance of this area and emphasize the need for more research in it. It is high time one went in depth to the factors which might particularly contribute to the promotion of scholastic achievement among the hitherto culturally and socially deprived sections of our society, the SC/ST students. An early implementation of educational strategies based on such research findings would go a long way in bringing to reality the equality of educational opportunity, an idea



which has been accepted as one of our national goals.

### **Institutional Characteristics and Achievement**

Of late, researchers have been trying to identify what types of variables interacting in the environment of a school affect the academic achievement of students and to what extent. Taking into consideration the climate in the institution as one of the variables in the study, and working on a sample of scheduled caste students, Rani (1980) and Shashidhar (1981) concluded that academic achievement was influenced, among other things, by institutional factors. The first investigator measured pupils' perception of institutional characteristics on an environment-assessment inventory developed for the purpose while the second measured school organizational climate using the Organizational Climate Description Questionnaire (Halpin and Croft).

Reddy (1981) studied the interrelationship between organizational climate, SES, students' perception of rewarding behaviour and the academic achievement of a random stratified sample of 1,607 students from 103 schools of Telangana area in Andhra Pradesh. The Halpin and Croft Organizational Climate Description Questionnaire was used in the study. The study found that academic achievement level of schools having the organizational climate profile of controlled, controlled-cum-paternal-cum-closed, controlled-cum-autonomous and controlled-cum-open to be 305.34, 303.47, 325.73 and 364.54, respectively out of a total of 600 marks. Desai (1979) and Hirunval (1980) both used Thelen's Classroom Climate Scale for their studies in Gujarat. Both these studies found a positive relationship between classroom climate and pupils' academic achievement. Subrahmanyam's (1981) study highlighted the importance of conditions at school *vis-a-vis* pupils' achievement. Multiple regression analysis of the data showed that personal characteristics of the children contributed to a large extent to their reading achievement and between the two factors, namely, school condition and home condition, an increase in school condition was likely to lead to better achievement. In yet another study Srinivasa Rao and Subrahmanyam (1982) reported similar results.

All the studies discussed above highlight the importance of environment provided by the school itself in the promotion of better achievement. But the question still remains as to which type of institutional characteristics is to be sought, which type of school climate affects the achievement, and to what extent, and so on. Further questions can be raised as to the optimal achievement

that could be expected by the interaction effects of student backgrounds with different types of institutional or classroom climates, etc.

It is for the future researchers to probe into these questions with tools developed or standardized in Indian conditions.

### **Miscellaneous**

As discussed earlier, a number of variables either independently or jointly have been found to influence academic achievement. In addition to the groups of studies falling into one or other classifications specifically, there are some studies which stand out as isolates, but which again indicate one or the other correlate of achievement. Such studies have been classified as miscellaneous.

The influence of reading speed and reading comprehension on achievement was the concern of Jain (1981). For this purpose the investigator developed and standardized a Silent Reading Comprehension Test for pupils of Standard VII. The test-retest reliability and split half reliability of the test were 0.91 and 0.94, respectively. Both these variables, namely, reading speed and reading comprehension, were found to have a positive relationship with achievement in school subjects. Working on the reading interests of high school pupils, Goswami (1982) also showed a significant relationship between academic achievement and reading interests.

Nair (1978), in his experimental study, found that creative methods of teaching physics and chemistry were superior to the traditional methods like verbal illustration and demonstration in attaining higher objectives in science. Murti (1982) found out the psychological determinants of backwardness in high school students. According to the study, backward and non-backward students were found as differentiated on the Cattell's B, C, E, G and Q<sub>3</sub> Factors. Backward pupils were found to be more maladjusted than non-backward pupils.

For learning English at the high school stage the factors playing a vital role, as revealed in a study by Jain (1979), were intelligence, English vocabulary, knowledge of grammar, comprehension, spelling and punctuation, speed and legibility of handwriting, the status of English in family, extra-reading in English, and the quality of the teacher. The same study pointed out that for learning mathematics at the high school stage the factors playing a vital role were intelligence, abstract reasoning, numerical ability, mathematical background, attitude towards mathematics, degree of motivation, study

hours, and the status of mathematics in the family. In a similar study Pal (1982) showed that general ability, scientific aptitude, reasoning, speed and precision and problem-solving ability were significantly responsible for the learning of science. Further, the study showed that good schooling, interest and industriousness played an important role in the learning of science.

What could teachers and students perceive as the correlates of academic achievement? An answer to this question was sought by Bhagirath (1978). According to the findings of the study, teachers and students perceived the correlates of academic achievement as intelligence, character, emotional adjustment, school and social adjustment, creativity, punctuality, alertness and efficiency.

Shashilata (1977) studied intellectual as well as non-intellectual predictors for success in the university examinations of the first degree classes for different streams of higher education, B.A., B.Sc. and B.Com. Intellectual predictors for the different streams came out to be different, while the non-intellectual factor adjustment to academic environment, measured on Narayan Rao's Indirect Academic Adjustment Inventory was found to be a common predictor for all streams. It was further found that the non-intellectual personality needs as measured on Edward Personal Preference Schedule were different for each stream. Another aspect of the question of prediction of academic performance at higher education level was studied in Tamil Nadu by Bhat and Indiresan (1981). They found that while the high school marks predicted, to some extent, the general ability of the students, they were not reliable indicators of performance in engineering subjects for students studying in polytechnics.

Debas (1979) found that school achievement in physical sciences was not significantly related with cultural status of students while it was influenced by teachers' attitude towards students. In his experimental work, Prasad (1977) showed that social reinforcement contributed significantly to academic achievement including achievement in science subjects.

### Research Trends in the Studies

An examination of the research studies documented under Dave (1974), Dave and Anand (1979), and those presented above, suggests some trends of research in the area of correlates of achievement. These are discussed under the sub-headings (i) variables studied; (ii) tools used; and (iii) methodology. Emerging trends in the area under each of these sub-headings are discussed with

an attempt to make suggestions for further work.

### Variables Studied

It has been firmly established by now that academic achievement is affected by personality variables, curricular variables, school and teacher variables, home environment variables, societal variables, and so on. Sufficient data are available on the relationship of many of these variables with achievement. There are quite a few well-planned, well-designed multivariate studies attempting to study many complex and interacting factors which contribute to or inhibit achievement. But there is need to subdivide complex variables and find out how each of the sub-variables is related with academic achievement. To make a case, it may be noticed that SES, which is a composite of sub-variables like parents' income, father's educational level, mother's educational level, educational facilities available at home, etc., has been found to fluctuate under different conditions in its relationship with achievement at school. Though an attempt has been made by a few researchers to consider a number of such sub-variables, it is felt that a greater emphasis should be laid on undertaking in-depth studies to analyse the relationships of academic achievement with their interactive effects.

Except for a stray study, it may be noted that studies which could be classified under either backwardness and failure and poor curriculum organization, the former category appearing in Dave (1974) and the latter appearing in Dave and Anand (1979), are now conspicuous by their absence. It is possible that researchers have either overlooked the importance of these areas or have not considered them worth probing further. However, it is encouraging to note that researchers have started exploring newer correlates of achievement. Worthy of mention are the studies which have considered creativity and institutional characteristics among the newer variables. A beginning has been made, and greater explorations are required to understand better the effects of these variables on academic achievement. Also, researchers may keep their search for additional and relevant correlates of achievement.

Again, a beginning has been made to understand the achievement of SC/ST students. Though such studies are very few, a trend has started emerging indicative of the superiority of non-SC students in their achievement over the SC students. It is high time that attempts were made to understand the constraints of achievement of not only SC and ST students but also of other under-privileged and backward classes of society, which might facilitate



the administrators to formulate such strategies as might help them in achieving better. This would hasten up the process of bridging the gap between the privileged and the under-privileged sections of the society and thus help in reducing the wastage of enormous human potential.

#### *Tools Used*

Except for a few well-known foreign tools like Cattell's Personality Questionnaires, Edward Personal Preference Schedule, Raven's Progressive Matrices, etc., which continue to be used, researchers have increasingly started using tools developed by Indian psychologists and educators. This is, of course, quite encouraging. But a note of caution has to be struck when a researcher develops a tool for his study by merely pooling some items and does not subject it to the sophisticated techniques of tool construction. The result would then be obvious—a poor quality research.

#### *Methodology*

A particular trend that emerges in this aspect of research is that a large number of researches carried out are descriptive in nature. The researcher selects some variables to study their relation with achievement, selects suitable tools, administers them to some available sample, and collects the required data. This he mostly subjects to correlational techniques or at best analysis of variance. Even the sophisticated techniques of factor analysis or co-variance are rarely used. So far so good. But in some researches even the tools used are not standardized ones. The investigator develops one or more tools for collecting data whether or not this was one of the objectives of the study. It may be possible that such tools might require more pruning as one can ap-

preciate that test construction itself is a vast field of research. Further, the main variable to be focussed on is achievement of pupils. In this regard, the scores on examinations are mostly considered. It is understandable that at the time of examination various extraneous factors would be operating. Researchers should think how far the marks obtained in these examinations would serve the purpose. Again, it should be noted that the time gap between the measurement of the various variables and the examinations is quite wide. It is high time achievement tests for various subjects and levels were standardized in each state so as to ensure a reliable index of achievement. This would also enable the research scholars to collect data without much delay.

Referring once again to the fact that the majority of the researches are post-facto descriptive in nature, there is a great need for experimental research at the present juncture. The findings of the descriptive research would provide a sound base to select the most effective variables and frame hypotheses accordingly. By planning suitable experimental designs and by applying suitable controls, it is hoped that further researchers would throw light on the cause-effect relationship between concerned variables. This would further help in finding out strategies to maximize achievement in different environments where particular sets of variables are found to interact.

Stray attempts are seen among the researchers to undertake longitudinal studies. This trend is welcome. More such researches are to be taken up where the researcher would study the phenomenon on a particular sample over a period of time.

It is for the researchers to consider the strong and the weak points in the network of researches done in the area of correlates of achievement and to seek the truth, which is the essence of any worthwhile research.

## ABSTRACTS : 950 – 1029

950. ACHARYULU, S.T.V.G., *A Study of the Relationship among Creative Thinking, Intelligence and School Achievement*, Ph.D. Psy., Utkal U., 1978

The major aim of the study was to clarify the nature of relationship among creativity, intelligence and school achievement, and especially to test for interactive effects of intelligence and creativity upon achievement in different school subjects. It also examined the Getzels-Jackson Effect besides testing Anderson's ability gradient theory in terms of the existence or otherwise of the maximum and minimum intelligence thresholds.

A random sample of 400 urban pupils (200 boys and 200 girls) drawn from a dozen schools located in Guntur and West Godavari districts of Andhra Pradesh was used in this study. Torrance Test of Creative Thinking (TTCT) both verbal and figural batteries which were translated into Telugu, provided the measures of creativity while Cattell's Culture Fair Intelligence Test (CFIT), Scale 2, Form B, provided the measure of intelligence. Achievement was based on two successive school examination marks in five subjects. Correlation and  $7 \times 3$  factorial (fixed effects) analysis of variance designs were used besides Scheffe's contrasts for testing the hypotheses.

The main findings of the study were: (i) There were no sex differences in intelligence, figural creativity, and achievement in Telugu, general science and social studies. Significant sex differences in verbal creativity and achievement in English and mathematics were found in favour of girls. The performance of either sex was better on the verbal than on the figural TTCT. (ii) The average correlation between intelligence and verbal TTCT ( $r = 0.21$ ) was not only significant but was also higher than that between intelligence and figural TTCT ( $r = 0.10$ ). These correlations were higher for girls than for boys. Further, the correlations between verbal TTCT and school achievement were as high as those between intelligence and school achievement. (iii) The hypotheses of interaction between intelligence and creativity as they affected school achievement were not supported in 34 out of the 35 sets of  $7 \times 3$  factorial analysis of variance. There was a significant disordinal interaction between intelligence and figural elaboration, although no definite trend in their effect on the English language was noticed. (iv) The main effects of both intel-

ligence and creativity were significant in 33 out of the 35 analysis of variance involving intelligence, verbal and figural creativity measures, and school achievement and the form of relationship was such that intelligence and creativity tended to be additive and more or less linear in their effect on school achievement. (v) There was no evidence for the existence of maximum or minimum intelligence thresholds, and neither Anderson's ability gradient theory nor Cicirelli's modification of it was supported. (vi) Getzels-Jackson Effect was confirmed by the non-significant differences in achievement between the high intelligence and high verbal creativity groups despite significant differences in their intelligence and verbal creativity. But in the case of the high intelligence and high figural creativity groups the evidence for the Getzels-Jackson Effect was rather weak. The achievement of the high intelligence and high verbal creativity group in different school subjects was significantly higher than that of the high intelligence and high verbal creativity groups.

951. AGARWAL, S.K., *A Psycho-social Study of Academic Under-achievement at Secondary School Level in the State of Rajasthan*, Ph.D. Edu., Raj. U., 1975

The objectives of the investigation were: (i) to identify the relationship between personality and academic achievement, (ii) to find out the relationship between the values of students and their academic achievement (iii) to study the relationship between parents' values and academic achievement, (iv) to study the relationship between socio-economic status of the family and academic achievement, and (v) to study the influence of rural-urban residence on academic achievement.

The hypotheses developed were: (i) Some of the fourteen personality factors are related to academic under-achievement and over-achievement of students. (ii) The values of students are also related to their under- and over-achievement. (iii) The social factors involved in the study are related to academic under-achievement and over-achievement of the students. Data were collected through Verbal Group Test of General Mental Ability, personality questionnaire, Students' Value Scale, Parents' Value Scale, Socio-Economic Status Index and Bhatnagar's Attainment Tests. The sample consisted of 1,408 Class XI students selected through the stratified sampling technique. The t-test was used for testing the hypotheses.

The major findings of the investigation were: (i) The

under-achievers were comparatively less emotionally mature, less calm, less placid, less prone to getting into difficulties and less able to face reality and possessed less ego strength than the over-achievers. (ii) The rural over-achievers in comparison to urban over-achievers were relatively more outgoing, more warm-hearted, more easy-going, more participating, more trustful, more adaptive and more social. The urban under-achievers as compared to rural under-achievers were relatively more tense, more driven, more over-wrought and more frustrated. (iii) The over-achievers had stronger educational, social and humanistic values than the under-achievers, but on the remaining three values—materialistic, religious and personal—the two groups were alike. (iv) The urban over-achievers had stronger educational, social and humanistic values than the urban under-achievers. The rural under-achievers and over-achievers did not differ significantly on any of the six values. (v) Parents' values were related to students' academic achievement. The parents of the over-achievers gave more importance to education of their wards than the parents of the under-achievers. (vi) Socio-economic status of the parents of the under-achievers and over-achievers was related to their achievement.

**952. ARUNA, N.S.,** *A Study of the Factors Influencing the Achievement of Standard VII Students Belonging to Scheduled Castes and Scheduled Tribes whose Medium of Instruction is Kannada*, Ph.D. Edu., Mys. U., 1981

The major objectives of the study were: (i) to compare the academic achievement of the Scheduled Caste (SC) and the Scheduled Tribe (ST) students studying in Standard VII with that of general population, (ii) to find out the caste-wise, location-wise and sex-wise differences in the academic achievement of SC and ST students, (iii) to examine the relationship of intelligence, adjustment and socio-economic status with the academic achievement of SC and ST students, and (iv) to find out the significance and the extent of influence of the selected factors on the academic achievement of SC and ST students.

From among twenty-one educational districts of Karnataka, Chitradurga was selected since it had high percentage of both SC and ST students studying in Standard VII. From this district the entire population of SC and ST students studying in Standard VII with Kannada as their medium of instruction was considered. The tools used for the study were the Achievement Test Battery constructed and standardized for the purpose, Pre-

malatha's Non-verbal Group Test of Intelligence, Pareek and others Pre-adolescent Adjustment Scale, and Sudha's Socio-Economic Status Scale and t-test, coefficient of correlation, and stepwise regression analysis were used in the analysis of the data.

The major findings of the study were: (i) The academic achievement of SC and ST students studying in Standard VII was significantly lower than that of general population. (ii) The academic achievement of ST students was superior to that of SC students. (iii) The academic achievement of SC and ST students studying in rural schools was inferior to that of their counterparts in urban schools. (iv) The academic achievement of boys (SCs and STs taken together) was superior to that of girls. (v) There was a significant correlation of 0.44 between the intelligence and the academic achievement of SC and ST students. (vi) There was a significant correlation between the adjustment and the academic achievement of SC and ST students. (vii) There was a significant correlation between the socio-economic status and the academic achievement of SC and ST students. (viii) The academic achievement of SC and ST students was mainly a function of intelligence among the selected factors for the study. Other significant factors were sex, general adjustment and education of father or guardian.

**953. BHAGIRATH, G.S.,** *Correlates of Academic Achievement as Perceived by the Teachers and Students of High Schools*, Ph.D. Edu., Pan. U., 1978

The major hypotheses of the study were: (i) Teachers and students perceived quite a good number of correlates as indicative of high academic success. (ii) There were differences in teachers' and students' perceptions of correlates of academic achievement. (iii) There may be differences in the perceptions of academic achievement correlated by teachers of different levels of intelligence, adjustment, sex, and place of residence of teachers. (iv) There were differences in the perceptions of correlates of academic achievement by students of different standards, sex, levels of adjustment, intelligence, and place of residence.

The study was conducted on a representative sample of 407 teachers and 901 students of Classes IX and X taken from thirty-nine schools of Ropar district (Punjab). The tools used for the collection of data were a list of correlates of academic achievement prepared and standardized by the investigator, Raven's Standard Progressive Matrices for measuring intelligence and Bell's Personal Adjustment Inventory (Adult Form).



The data were analysed employing the statistical techniques of mean, median, mode, standard deviation, skewness, kurtosis, product moment correlation and factor analysis by principal axis method.

The major findings of the study were: (i) The teachers and the students perceived the correlates of academic achievement as intelligence; character, emotional adjustment, school and social adjustment, creativity, punctuality, activeness, alertness, efficiency, social/emotional adjustment, and intelligence/social adjustment. (ii) All the students and the teachers agreed on intelligence, emotional adjustment and social and school adjustment but differed in respect of creativity and punctuality dimensions. (iii) The above-average intelligence and maladjusted teachers (AAI-MA), the above-average intelligence and well-adjusted teachers (AAI-WA) and the below-average intelligence and well-adjusted teachers (BAI-WA) agreed on only two correlates, namely, intelligence and character and differed on emotional, social, and school adjustment. (iv) Perceptions of the urban and the rural teachers were almost the same. (v) The male and the female teachers agreed on the dimensions of intelligence, character and social and school adjustments. In addition, the male teachers laid more stress on creativity and activeness, and the female teachers on emotional adjustment. (vi) The students of Classes IX and X perceived the same correlates, with an exception of creativity perceived by the Classes X students. (vii) The AAI-WA, AAI-MA, BAI-WA, and below-average intelligence and maladjusted (BAI-MA) students had almost the same perceptions, except for the dimension of activeness which the BAI-MA students did not perceive. (viii) The urban and the rural students were on the same footing in respect of all the major correlates but showed differences in some minor ones, such as the urban students visualized alertness, whereas, the rural students perceived activeness and efficiency as correlates. (ix) The male and the female students perceived the same correlates. The female students perceived an extra dimension of activeness.

954. BHAT, R.N. and INDIRESAN, J., *The Correlation of Performance of Students in High Schools with Their Achievement in Polytechnics*, TTTI, Madras, 1981 (UNDP-assisted)

Admissions to polytechnics are made mainly on the basis of the marks obtained by students in their high school examination. This study was initiated to find out how good a predictor these high school marks were

about the performance of students in polytechnics. As there were reservations for certain categories of students based on their special background, in this investigation an attempt was made to study the differences in the performance of students belonging to different socio-economic backgrounds.

Data were obtained for a total number of 406 students in civil, mechanical and electrical engineering who completed their diploma courses in 1977 from five polytechnics in Tamil Nadu. These polytechnics were randomly selected to represent the rural/urban location and government/private management. Data on socio-economic factors and marks in high school and polytechnic examinations were obtained to study the relationship between the high school marks and the performance in the polytechnics.

It was found that the correlation between the high school marks and the first year subjects, which included science and English, was fairly high and the correlations decreased in strength as the semesters which dealt with engineering subjects, progressed. This, perhaps, indicated that while the high school marks predicted to some extent the general ability of the students, they were not reliable indicators of performance in engineering subjects. Further, the correlations were observed to be very low for the high school marks to be useful as predictors. The implication of this finding was that additional selection criteria along with the high school marks would improve the selection procedure leading to better final performance. Regarding the differential performance of students belonging to different socio-economic backgrounds, no definite conclusions could be drawn as the sample consisted mainly of students belonging to the backward class and low-income group.

955. CHATTERJI, S., MUKHERJEE, M. and BANERJEE, S.N., *Effect of Certain Socio-economic Factors on the Scholastic Achievement of the School Children*, Psychometric Research and Service Unit, ISI, Calcutta, 1971

The main aim of the study was to investigate the effect of some important aspects of social class such as income, parents' education, family size, general condition of the home, etc., upon the scholastic achievement.

The subjects were 230 students, both boys and girls, studying in Classes VI and VII in eight different Bengali-medium schools in Calcutta. The intelligence level of the students was measured using the Non-Language Test of Verbal Intelligence. Information regarding the socio-

economic status of the subjects was collected through a questionnaire. Annual examination marks in English, Bengali, mathematics, science, history and geography and the total marks in the subjects were considered the measure of achievement. The intelligence test scores were converted into stanine grades and based upon the stanine grades they were divided into three groups, viz., low, average and high. Within the high, medium and low intellectual ability groups, the students were further divided into subgroups, separately on the basis of the information collected through the questionnaire.

The findings of the study were: (i) The economic conditions of the family seemed to have no effect upon the scholastic achievement in all the intellectual ability groups. Similarly, possession of a study-room had no favourable effect in increasing the achievement score in almost all the cases. (ii) The family size and the number of siblings were inversely related to the scholastic achievement specially in the low intellectual level. In some cases, parent's help had significant positive contribution towards higher achievement. (iii) Parents' educational level was directly related to the achievement of their children. (iv) In high ability group, children had greater achievement when they had no private tutor than when they prepared their lessons under the guidance of a private tutor. (v) Fathers' occupation was not consistently related to children's achievement. For the high ability group, children of servicemen excelled the children of businessmen but the trend was reversed for the average and low intellectual groups.

**956. CHAUDHARI, V.P., JAIN, *Factors Contributing to Academic Under-achievement*, Ph.D. Psy., Nag. U., 1975**

The objective of the study was to make a critical study of the factors contributing to academic under-achievement. It was assumed that the factors contributing to academic under-achievement, viz., study habits, personality structure and environmental conditions, were interrelated.

In order to obtain a sample of 300 bright under-achievers, bright achievers and dull achievers a large group of 3,500 students was taken. For determining various groups of under-achievers, the P.S.M. General Intelligence Test (Marathi and Hindi) was administered to measure mental abilities of the subjects. Achievement of students was obtained by averaging the last three annual examination marks. Using these scores, Accomplishment Quotient (AQ) was calculated. The students

whose critical ratio of achievement was 0.70 or below were categorized as bright under-achievers, those whose critical ratio of achievement was above 0.91 were grouped as bright achievers and those whose critical ratio of achievement fell between 0.71 and 0.90 were called dull achievers. In addition, other tests used were Sinha's Anxiety Scale, Adjustment Inventory (Saxena), Study Habit Inventory (Jamuar), Aronson's Graphic Expression Test and Socio-Economic Status Scale (modified form—Kuppuswamy).

The major findings of the study were: (i) The study habits of achievers differed significantly from under-achievers. (ii) A correlation between the study habit score and the index of achievement was quite high in the case of the male candidates. (iii) Achievement motivation of bright achievers was higher than that of bright under-achievers. (iv) Dull achievers had low achievement motivation than bright under-achievers. Difference in the mean score of n-achievement of two groups was sharper in the case of boys than in girls. (v) There was a negative correlation between anxiety and achiever index (critical ratio). Achievers who had high level of achievement motivation had minimum anxiety whereas dull achievers with low level of achievement had high level of anxiety. (vi) The factors contributing to academic under-achievement varied significantly with sex. (vii) Girls in comparison with boys of respective groups had higher achievement motivation. (viii) Girls differed significantly on Sinha's Anxiety Scale; under-achievers differed from achievers at 0.05 level and from dull achievers at 0.01 level. (ix) Bright children normally came from families where parents had higher level of education, were mostly engaged in professions requiring general knowledge and knowledge of mathematics, and had more income than the parents of dull students. (x) The mothers of bright achievers had higher level of education than the mothers of under-achievers. (xi) Bright-achieving female candidates had better general adjustment. (xii) Product moment coefficient of correlation between n-achievement and home adjustment was 0.34 and 0.17, respectively for girls and boys. (xiii) Product moment coefficient of correlation between n-achievement and mother's education was 0.34 and 0.15 in the case of girls and boys, respectively.

**957. CHOPRA, S.L., *A Study of Some Non-intellectual Correlates of Academic Achievement*, D. Litt. Edu., Luc. U., 1982**

The study was designed to identify the variables hav-

ing positive relationship with academic achievement and to find out the relative importance of intelligence and various non-intellectual variables in determining academic achievement.

A random stratified sample consisting of 309 girls and 598 boys (age range 15 to 16 years) studying in Class X of twelve boys' and five girls' schools was selected. Marks in high school examination were taken as the Criterion of academic achievement. Raven's Progressive Matrices Test was administered for the measurement of intelligence and Kulshreshtha's Socio-Economic Status Scale was administered to have an idea about the socio-economic level of the families of the students. Information regarding home background, educational and vocational aspirations, planning for a career and educational and vocational expectations, parental encouragement for education was collected with the help of a questionnaire. An adaptation of Bell Adjustment Inventory was used for the assessment of students' adjustment in the four areas — home, health, social and emotional. Hindi adaptation of Brown-Holtzman Survey of Study Habits and Attitudes was administered to have an idea about the students' study habits and attitude towards scholastic activities. An attitude scale was constructed to measure students' attitude towards education. The data so collected were analysed to find out the relationship between high school marks, intelligence test scores and various non-intellectual variables. After identifying the variables having positive relationship with academic achievement, coefficient of multiple correlation between the variables that had been measured quantitatively, and academic achievement was worked out. Thereafter using Wherry Doolittle method beta coefficients were calculated to find out the relative importance of different variables in academic achievement.

The major findings of the study were: (i) Socio-economic background was a very important determinant for continuation of education. Significantly a larger number of students from the lower socio-economic classes failed in the high school examination and significantly a larger number of first class students belonged to higher socio-economic classes. Parents from higher socio-economic classes gave greater help and encouragement to their children for studies. (ii) Study habits were positively related to academic achievement. (iii) Students from higher socio-economic classes had higher educational and occupational aspirations. (iv) A larger number of students from higher socio-economic classes did some planning for a future career in life. (v) Home adjustment was more closely related to academic achievement than emotional, health and social adjust-

ment. (vi) Attitude towards education had very high positive correlation with academic achievement. (vii) As regards relative importance of different variables, the coefficient of multiple correlation between academic achievement and intelligence, socio-economic status, study habits, home adjustment, health adjustment, social adjustment, emotional adjustment and attitude towards education was 0.874. The coefficient of multiple determination was 0.764. To determine the importance of different variables for the prediction of academic achievement beta coefficients were calculated and the variables in order of magnitude of the coefficient were attitude towards education, socio-economic status, intelligence, study habits, home adjustment and social adjustment. Health and emotional adjustment did not appear to add to predictive value when these variables were taken together.

\* 958. CONTRACTOR, B.M., *Educational Attainment as a Function of Certain Variables*, Ph.D. Psy., Guj. U., 1977

The objectives of the investigation were: (i) to study the relationship between educational attainment and intelligence, n-achievement, socio-economic status, and the ordinal position at birth in the family, (ii) to study the relationship between educational attainment and neuroticism, extraversion, anxiety, general maladjustment, the number of siblings, the family size, and (iii) to study the nature of relationship between the selected variables with respect to both the sexes.

Three hundred students who had completed their S.S.C. examination from Ahmedabad city were selected randomly. Data were collected using Standard Progressive Matrices Test, Thematic Apperception Test, Self Analysis Questionnaire developed by the investigator, Gujarati version of Maudsley Personality Inventory, Gosai's Personality Adjustment Inventory and Personal Information Blank. The data were analysed by using correlational and multiple regression analysis. Separate analyses were done for high, medium and low achievers belonging to both the sexes.

The major findings of the investigation were: (i) Educational attainment was functionally related positively to intelligence, n-achievement and socio-economic status. (ii) Educational attainment was functionally related in negative direction to anxiety and the family size. (iii) Educational attainment was not related functionally to neuroticism, extraversion, maladjustment, the ordinal position of birth in the family and the number of sibl-



ings. (iv) Intelligence accounted for 25 per cent of the variance in educational achievement. (v) All personality variables including n-achievement accounted for only 5 per cent variance in the educational attainment. (vi) Only 44.07 per cent of the variance in educational attainment was accounted for by all the variables taken together. (vii) About 49.41 per cent and 41.50 per cent of the total variance in educational attainment was accounted for by the selected variables taken together with respect to males and females, respectively.

**959.** DEBAS, J.K., *Children's Perception of Teachers' Attitude towards Them and Its Relationship with Self Perception, Home Environment and School Achievements*, Ph.D. Edu., JMI, 1979

The objectives of the study were to know (i) the attitude of teachers (as measured in terms of their perception of the pupil's characteristics) towards students belonging to different cultural backgrounds, (ii) how students perceived their teachers' evaluation regarding the same characteristics, (iii) the relationship between students' perception of their teachers and self-perception regarding the same characteristics, and (iv) the relationship of the attitude of teachers and students' self-perception to school achievement.

The sample consisted of all male students of Class IX studying in government boys' higher secondary schools of Delhi in north district, having Hindi as medium of instruction and belonging to different cultural backgrounds. The tools used for the study were Advanced Progressive Matrices for measuring intelligence. A Cultural Status Scale was developed by the investigator for measuring home environment or cultural status of students as well as the Pupil's Characteristics Rating Scale to assess three kinds of perception, namely, pupils' own perception about themselves regarding some of their personality characteristics, pupils' perception of teachers' evaluation on the same characteristics and teachers' attitude as measured in terms of their perception of pupils' characteristics.

The findings of the study were: (i) Children's perception of teachers' attitude towards them was significantly related with pupils' self-perception, teachers' perception of pupils' characteristics and school achievement (in physical sciences), whereas it was not significantly related with the cultural status of students. (ii) Teachers' attitude towards children coming from advantaged homes was more favourable than towards children coming from disadvantaged homes. (iii) School achievement

(in physical sciences) was not significantly related with the cultural status of students whereas teachers' attitude (as measured in terms of their perception of pupils' characteristics) towards students was likely to affect their school achievement (in physical sciences).

**960.** DESAI, S.D., *A Study of Classroom Ethos, Pupils' Motivation and Academic Achievement*, Ph.D. Edu., MSU, 1979

The major objectives of the investigation were: (i) to study the level of classroom climate and its components, (ii) to measure pupils' motivation, academic achievement and non-academic achievement, (iii) to study the relationships between classroom climate, pupils' motivation, academic and non-academic achievement and socio-economic status, and (iv) to prepare profiles with respect to classroom climate, pupils' motivation and their achievement.

The sample consisted of 1,555 pupils selected from forty-one classes of twenty-six secondary schools. The research tools for data collection used in the study were the Classroom Climate Scale of Thelen, Junior Index Motivation of Frymier, Socio-Economic Status Scale of Kuppaswamy, Academic Achievement Rating Scale and Non-academic Achievement Rating Scale constructed by the investigator. Descriptive statistics, t-test and product moment correlation were used for data analysis.

The major findings of the investigation were: (i) The level of classroom climate was positively related to pupils' motivation and their academic achievement. (ii) Pupils' academic motivation was positively related to their academic achievement. (iii) Socio-economic status had no relationship with pupils' classroom climate or pupils' motivation or with academic achievement. (iv) Non-academic achievement had no relationship with classroom climate and pupils' motivation. (v) Boys were higher than girls in the level of classroom climate, pupils' academic motivation and pupils' academic achievement. (vi) Pupils of Gujarati-medium schools were higher than those of English-medium schools in the scores on classroom climate, pupils' academic motivation and pupils' academic achievement. (vii) Boys' schools had higher mean scores of classroom climate, pupils' motivation, and academic achievement than mixed and girls' schools.

**961.** DHAMI, G.S., *Intelligence, Emotional Maturity*

*and Socio-economic Status as Factors Indicative of Success in Scholastic Achievement*, Ph.D. Edu., Pan. U., 1974

The major hypotheses of the study were: (i) Intelligence and emotional maturity contributed equally to success in scholastic achievement. (ii) A close relationship existed between intelligence and emotional maturity. (iii) A close relationship existed between socio-economic status (SES) and scholastic achievement.

A stratified random sample of students of the age-group 14+ and 15+ was drawn from Classes IX and X of different categories of schools in Punjab. The tools used for collecting the data were Intelligence Test (Punjabi version) by Jalota and Singh, Emotional Maturity Scale by Willoughby translated into Punjabi, the SES Scale developed by the investigator on the basis of Jalota and others; the index of scholastic achievement was determined from the average of the percentage of marks secured in the middle standard examination, the annual examination, and other house tests for two years. Descriptive statistics such as mean, median, standard deviation, skewness, and kurtosis were worked out for various distributions. In addition, product moment correlations, inter-correlations, multiple correlations, regression equations, and factor analysis were also used in the statistical analysis of the data.

The major findings of the study were: (i) Intelligence and emotional maturity contributed substantially to success in scholastic achievement. The contribution of intelligence was more than that of SES. (ii) A close and significantly high relationship existed between intelligence and emotional maturity. (iii) The relationship between SES and scholastic achievement, though statistically significant, was not very high. (iv) The relationship between scholastic achievement and intelligence, between scholastic achievement and emotional maturity, and between SES and scholastic achievement differed significantly from each other. (v) The SES had a positive effect on emotional maturity especially the factors of parents' education, family income, cultural level of the family, the type of the house the family lived in and the vocational aspirations of learners. (vi) The effect of SES on the scholastic achievement of girls was more striking. (vii) The relationship between scholastic achievement and intelligence was higher in the case of students of private schools than for those of government schools. (viii) There was higher relationship between scholastic achievement and emotional stability in the case of Class IX boys than in the case of Class X boys who were more anxiety-ridden due to the coming public examinations.

**962.** D'LIMA, C.D., *Differential Study of High and Low Achievement Syndromes of a Select Group of Creatively Gifted and Intellectually Gifted Children in the City of Bombay*, Ph.D. Edu., Bom. U., 1979

The main objectives of the study were: (i) to make a comparative study of the different types of achievers amongst the different types of gifted pupils, namely, creatively gifted and intellectually gifted, (ii) to find out the variables that significantly distinguish between the different pairs of groups of gifted pupils, and (iii) to predict the achievement of gifted pupils with the help of the data gathered on psycho-social factors.

The sample consisted of students of Standard IX from twenty-five English-medium schools in Bombay. The tools used for data collection were Passi Test of Creativity, Nafde's Non-Verbal Tests of Intelligence and various psychological tests to collect data on psycho-social variables.

The major findings of the study were: (i) The double-talent groups had a higher percentage of high achievers and the single-talent groups had a higher percentage of low achievers. (ii) There was significant difference between the different types of gifted pupils. (iii) The different types of gifted groups formed on the basis of intelligence and creativity seemed to be highly similar in academic achievement, social interaction, self-concept, academic motivation and independence stability. (iv) The different types of gifted groups formed on the basis of intelligence and creativity differed in general intelligence, general talent and self reliance-dominance. (v) There was significant difference between the low and the high achievers amongst the different types of gifted pupils.

**\*963.** GANDHI, P., *Academic Achievement in relation to Achievement Motive, Affiliation Motive and Power Motive*, Ph.D. Edu., BHU, 1982

The main objectives of the investigation were: (i) to develop and standardize comprehensive objective measures of achievement motive, affiliation motive and power motive, in Hindi, for school-going population, (ii) to study the nature of distribution and sex differences in the above three motives among high school students, (iii) to find out interrelationship among these three motives, (iv) to study the relationships of these three motives with the academic achievement of high school students, (v) to study the joint and relative contribution of these three motives and background factors in determin-

find out the difference in the aptitudes, personality traits and achievement motivation of over-achieving and under-achieving students with regards to sex, academic streams and residential background, (ii) to hierarchically present the relative contribution of the identified personality traits, aptitudes and levels of achievement motivation to the prediction of academic achievement of over- and under-achievers, and (iii) to find out the relationship between the personality traits, aptitudes and levels of achievement motivation of the over-achievers and under-achievers.

The sample of the study consisted of 1,948 students of both sexes, studying in Grades IX, X and XI of the various higher secondary schools of Raipur district of Madhya Pradesh opting for different academic streams, namely, humanities, science and commerce. The under- or over-achievement of the subjects was determined on the basis of the scores obtained by them on the Group Test of General Mental Ability (Mehrotra) and the achievement records of their past three consecutive examinations, of which one was the external and the other two the internal examinations. The subjects having high intelligence and low academic achievement were called under-achievers (UA), and the subjects having low intelligence and high academic achievement were called the over-achievers (OA). The final sample thus selected for the study consisted of 291 over-achievers and 236 under-achievers. The tools used were the Scientific Aptitude Test Battery (Agarwal), Verbal Aptitude Test (Sharma), the 14PF test (HSPQ) and the Achievement Motivation Inventory (Mehta). The statistical techniques used for data analysis were multiple coefficients, t-test, analysis of variance and regression equations.

The findings of the investigation were: (i) The over-achievers and under-achievers did not differ significantly on any of the independent variables, namely, aptitudes, achievement motivation or personality traits. (ii) The over-achievers, regardless of sex possessed high achievement motivation whereas the under-achievers possessed relatively low achievement motivation. (iii) The male over-achievers scored significantly higher than the male under-achievers on factors G, H, I, and Q<sub>3</sub> of the HSPQ whereas the female over-achievers and under-achievers differed significantly on only factor C of personality on which the under-achievers scored higher than the over-achievers. (iv) The differences between the means of the sub-urban under-achievers and over-achievers on the composite aptitude test were significant and the means were in favour of the former group whereas there were no significant differences in the ap-

titude scores of rural as well as urban over- and under-achievers. (v) Regardless of the territorial differences, the over-achievers showed a significantly higher mean score than the under-achievers in factors G, Q<sub>3</sub>, H, F, I and O of the HSPQ. (vi) The greatest source of variance for the over-achievers was the personality variables whereas it was aptitude for the under-achievers. (vii) Over-achievement was primarily determined by the non-intellective personality variables whereas under-achievement was closely related to the intellective factors.

966. GOSWAMI, P.K., *A Study of the Self-concept of the Adolescents and Its Relationship with Scholastic Achievement and Adjustment*, Ph.D. Edu., Agra U., 1978

The objectives of the investigation were: (i) to study the nature of the distribution of self-concept of adolescents, (ii) to study the self-concept of adolescents in relation to sex, intelligence and place of residence, (iii) to find out the relationship between self-concept and scholastic achievement, (iv) to find out the relationship between self-concept and adjustment, and (v) to construct a test of self-concept.

The descriptive method of research was followed to carry out this study. Differential and correlational techniques of research were used. The sample was drawn from the rural student population of Class X of Tehsil Bah and the urban population of Class X of Agra city.

The findings of the investigation were: (i) The self-concept of the adolescents was a personality characteristic which was normally distributed in the population of adolescent students. (ii) There tended to be sex difference in the self-concept. It seemed that the male adolescents received more encouragement and attention in the home and society than the female, and developed brighter self-concept than the latter. (iii) The more intelligent adolescents tended to have brighter self-concept than the less intelligent ones. It meant that self-concept was not wholly a non-intellective characteristic of persona-

(iv) The extent of relationship between intelligence and self-concept did not change with place of residence (rural or urban) or with sex. (v) The rural students tended to have as good self-concept as the urban ones and the rural environment was not uncongenial for the development of adequate self-concept. (vi) It was the satisfying and frustrating experiences of the adolescent



in his social milieu in which he interacted with the members of the family, peers and other people that formed his self-concept. (vii) There existed positive relationship between self-concept and achievement and the adolescents with good self-concept were likely to achieve more than those with poor self-concept. (viii) Scholastic achievement highly correlated with the concept of one's mental health and of socio-economic status. (ix) There was a strong relationship between self-concept and adjustment. Good self-concept depended on good adjustment and *vice versa* but the adolescents who had very high concept of their socio-economic status in the rural areas did not have good adjustment in the changing socio-political conditions.

- \*967. GOSWAMI, R., *An Enquiry into Reading Interests of the Pupils of Standards VIII to X in relation to Intelligence, SES (Socio-Economic Status) and Academic Achievement*, Ph.D. Edu., MSU, 1982

The main objectives of the study were: (i) to inquire into reading interests of pupils of Standards VIII, IX and X, (ii) to find out relationship between reading interests and different pupil characteristics, namely, age, sex, standard, socio-economic status, intelligence and academic achievement, and (iii) to find out the difference in reading interests among different groups of students classified in terms of standard, age, sex, SES, intelligence and academic achievement.

The population of the study consisted of all the pupils of secondary level of English-medium high schools of Baroda. Out of these schools ten English-medium schools were selected and 679 students were drawn randomly from Standards VIII, IX and X, who constituted the sample for the study. Reading interests of the students were measured with the help of a questionnaire constructed by the investigator. Intelligence was measured by Madhukar Patel's Non-Verbal Test of Intelligence and SES was measured using the Socio-Economic Status Scale constructed by Pareek and Trivedi. The records of total marks of annual school examination were taken to represent the academic achievement of the pupils. The data were analysed using mean, standard deviation, product moment correlation and t-test.

The major findings of the study were: (i) Although there were high reading interests among the pupils of all the three standards, it was relatively higher among Standard X students and lower among the pupils of Standard VIII. (ii) Books preferred by the students most were

story books (38.3 per cent) followed by comic/humour books (37.9 per cent), general knowledge books (34.3 per cent), novels (29.2 per cent) and science books (27.9 per cent). (iii) There was considerable interest in reading newspapers among the students. The percentage of the students who read newspapers daily was 76.21. (iv) Reading of comics was popular among the students to a great extent—85.69 per cent of the students read comics. (v) The majority of the students preferred to read through English language (76.21 per cent). (vi) For a majority of the students (74.41 per cent), friends constituted the source for supply of reading materials. (vii) There was no significant relationship between the reading interests and the standards of the pupils. (viii) There was a negative relationship between reading interests and age. The reading interests of the students reached a peak value at the age of 12 to 13 years and then started declining with the advance of age. (ix) There was no difference in the reading interests of boys and girls at the secondary stage. (x) There was significant relationship between socio-economic status of the students and their reading interests. Difference between the reading interest scores of high and middle groups was not significant and those between middle and low groups as well as between high and low groups were significant. (xi) There was significant relationship between academic achievement and reading interests. (xii) Relationship between the intelligence and the reading interests of the students was significant.

968. HIRUNVAL, A., *A Study of Pupils' Self-concept, Academic Motivation, Classroom Climate and Academic Performance*, Ph.D. Edu., MSU, 1980

The major objectives of the investigation were: (i) to measure the levels of academic motivation, self-concept, classroom climate, and academic performance of pupils, (ii) to find out the relationships between academic motivation, self-concept, classroom climate and academic performance, and (iii) to study the influence of age, sex, location, management types of schools on academic motivation, self-concept, classroom climate and academic performance of pupils.

The sample consisted of 1,031 pupils of Class IX of the Central Schools, missionary schools and private-aided schools located in ten cities of Gujarat. The tools for data collection consisted of a test for measuring self-concept (*Who-Am-I* technique), Junior Index of Motivation for measuring academic motivation, Classroom Climate Scale, and exercises on Motivation Development Prog-

ramme. Statistical techniques used were descriptive statistics and product moment coefficient of correlation.

The major findings of the investigation were: (i) Academic motivation as measured by Junior Index of Motivation was positively related to self-concept and some of its components like goal-oriented activity, problem-avoidance. It was negatively related to other components of self-concept such as parental dependence, social commitment, and not related to awareness of personal block and initiative. (ii) Boys were more academically motivated than girls. Pupils in rural areas were more academically motivated than those in the urban areas. (iii) Pupils of missionary schools showed greater academic motivation than those of Central Schools and other private-aided schools. (iv) The self-concept of pupils and their classroom climate showed positive relationship. (v) Self-concept and pupils' academic performance, and pupils' academic performance and classroom climate were positively related. (vi) Pupils of twelve years of age were more academically motivated and had a better self-concept than older pupils. (vii) Boys scored better on the self-concept scale than girls. Urban pupils had better self-concept than rural pupils. (viii) Classroom climate bore a positive relationship to pupils' performance. (ix) Classroom climate in urban schools was better than that in rural schools.

**969.** HOMCHAUDHURI, S., *An Analytical Study of Correlates of Academic Performance of College Students (Tribal) of Mizoram*, Ph.D. Edu., MSU, 1980

The investigation aimed at surveying the levels of self-concept, anxiety, family influence and socio-economic status and studying the relationship of these factors with academic performance. The effect of the above-mentioned variables on academic performance was also studied. It was also attempted to study the nature of perception of self, home, institution, studies, community and country of tribal students with high and low academic performance.

The sample for the study was drawn from all the five colleges of Mizoram. In all, 459 pre-university second year students were selected (349 boys and 110 girls). In order to collect the required data, students in each college were given the tests together in two sessions. To make the self-perception inquiry, Who Am I? and other five descriptive tools developed by the investigator were administered. Socio-economic status and family influence scales were also developed to measure the socio-

economic status and students' perception of the influence of family along three dimensions, namely, democratic, lukewarm and authoritarian. To measure anxiety, Sinha's Anxiety Scale was used. The data were computerized and means, standard deviations, correlations and t-ratios were computed and multiple regression analysis was carried out.

The major findings of the study were: (i) Self-concept emerged as the most significant correlate of academic performance. (ii) There was no significant difference between the girls and the boys with regard to self-concept. (iii) Socio-economic status also came out as a significant correlate of academic performance. (iv) Anxiety had low positive significant relationship with academic performance. (v) The high achievers were significantly more anxious than the low achievers. (vi) The high achievers found the emotional atmosphere of their homes to their liking. (vii) The low achievers found an absence of good environment at home. (viii) The high achievers showed quite a high level of expectation with regard to their performance in the examination. (ix) Their analysis of the performance was quite objective. (x) The low achievers showed an abnormally high level of expectation and great judgement discrepancy with regard to performance. (xi) A substantial proportion of high achievers did not like the manner in which the classes were taken; they thought the college should provide better teaching. (xii) Quite a sizable proportion of the low achievers were critical of physical facilities and students' conduct. (xiii) The high achievers showed their liking for a number of values upheld in the community. (xiv) The low achievers showed their likes and dislikes for different aspects of community to a much less extent than the high achievers. (xv) The high achievers observed the marks of democracy in the life of the nation more deeply than the low achievers.

**970.** HUSSAIN, M.Q., *A Study of Academic Attainment in relation to Level of Aspiration and Anxiety*, AMU, 1977

The major aim of the investigation was to study the academic attainment of university students in relation to the level of aspiration and anxiety.

The sample comprised forty-five students of the undergraduate and pre-university classes of Aligarh Muslim University. Those students who fell within the top and bottom ten per cent of the distribution of scores on Mohsin's Intelligence Test were eliminated. The tools used were the L.A. Coding test by Ansari and Ansari

and Sinha's Anxiety Scale. For measuring of academic achievement, the aggregate marks obtained by the students in their semester examinations, held after the administration of the other tests, were used. In order to study the effect of anxiety and level of aspiration and their interaction on academic performance a 3×3 factorial design of analysis of variance was employed.

The major findings of the investigation were: (i) The academic performance of the group with moderate anxiety was significantly better than that of both the high and the low anxiety groups. Anxiety bore a curvilinear relationship with academic achievement. (ii) The effect of the level of aspiration on the academic performance was also of the same nature as obtained in the case of anxiety. The academic performance of the group showing moderate goal discrepancy was better than that of the groups showing either high or low goal discrepancy, implying a curvilinear relationship between the level of aspiration and academic performance. (iii) High anxiety had adverse effect on academic performance. Low anxiety also showed a lack of drive and motivation in the students. (iv) High and low aspiration showed unrealistic and defensive attitude resulting in low achievement. (v) Interaction between anxiety and aspiration did not exercise any significant effect on the academic performance.

**971. IYER, K.K.,** *Some Factors related to Under-achievement in Mathematics of Secondary School Students*, Ph.D. Edu., Ker. U., 1977

The investigation was designed to identify a broad group of causal factors related to under-achievement in mathematics.

The study was conducted on a representative sample of 862 subjects selected from a representative educational level—Standard IX—of the secondary schools of the Trivandrum district of Kerala. Two aptitudinal criteria, a verbal group test of intelligence, a non-verbal group test of intelligence and a standardized test of mathematics were administered to the subjects. The hypotheses tested were: (i) The fourteen personality variables (self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, withdrawing tendencies, nervous symptoms, social standards, social skills, antisocial tendencies, family relations, school relations, community relations, general anxiety and test anxiety) would discriminate between under-achievers and students at other selected achievement levels in mathematics. (ii) If the two extreme groups were formed on the basis of the non-personality variables, there

would be significant difference in the proportion of under-achievers or in any of the other related achievement levels in mathematics.

The major findings of the investigation were: (i) Out of the fourteen personality variables selected, ten variables were most effective in discriminating between all the achievement pairs, viz., over-achievers (OA) and normal achievers (NA) and normal achievers and under-achievers (UA) and over-achievers and under-achievers. The most effective variables were self-reliance, sense of personal freedom, feeling of belonging, withdrawing tendencies, nervous symptoms, social skills, school relations, community relations, general anxiety and test anxiety. (ii) The variable which was the least effective in discriminating was antisocial tendencies. (iii) None of the fourteen personality variables was able to discriminate between the three achievement pairs, viz., over-achievers and non-over-achievers (NOA) and non-under-achievers (NUA) and under-achievers. (iv) None of the fourteen personality variables discriminated between normal achievers and discrepant achievers (DA). (v) Out of the eleven non-personality variables, five variables (sex, age, caste, parental profession and parental education) were associated with all the three achievement levels. (vi) There was significantly a greater number of over-achievers among the high intelligence group than among the low intelligence group.

**972. JAIN, D.K.,** *A Study of Significant Correlates of High School Failures in Mathematics and English with special reference to Jammu Division*, Ph.D. Edu., Jammu U., 1979

The aims of the study were: (i) to isolate the main factors which influenced attainment in English and Mathematics at the high school stage, (ii) to determine the degree of impact of the selected factors on the achievement of English and Mathematics at the high school stage, and (iii) to identify the difficult areas of study both in English and Mathematics as perceived by students.

For the collection of data the measuring devices used were Humanities Group Test of General Mental Ability (Joshi), scale to measure attitude towards English, English ability test, Speed and Legibility of Handwriting Measuring Device, a questionnaire on various aspects of learning of English, numerical ability test, abstract reasoning test, mathematical ability test, a scale to assess attitude towards mathematics and a questionnaire on various factors associated with mathematics achieve-



ing the academic achievement of high school students, and to derive a multiple regression equation for predicting the same, and (vi) to measure the interaction effect of high, average and low levels of these three motives on the academic achievement.

The study was carried out in two phases. In the first phase, the tryout forms of the three inventories were administered on a sample of 370 high school students and after item analysis the final forms of the three tests were administered to 500 male and 500 female high school students for standardization. In the second phase, a sample of 359 boys and 448 girls was taken for the main study. Six null hypotheses were formulated for examination. In addition to general statistical method, three-way analysis of variance in a  $3 \times 3 \times 3$  factorial design and multiple regression analysis were employed for analysing the data.

The main findings of the investigation were: (i) The achievement, affiliation and power motive inventories, having 30 items in each of them, had a fairly high degree of reliability and validity coefficients. (ii) All the three motives were almost normally distributed in the high school students. (iii) There was no significant sex difference with respect to achievement motive. (iv) High school girls had significantly higher motive to affiliate than high school boys. (v) High school boys were significantly high on power motive in comparison with high school girls. (vi) Achievement motive was significantly and negatively related to affiliation motive. (vii) Achievement motive was significantly and negatively related to power motive. (viii) There was no significant relationship between affiliation and power motive. (ix) Achievement motive was significantly and positively related to academic achievement of high school students of both the sexes. (x) Affiliation motive was significantly and negatively related to academic achievement of high school boys whereas this relationship was not significant in the case of high school girls. (xi) There was no significant relationship between power motive and academic achievement in high school boys and girls. (xii) The academic achievement of high school boys and girls was significantly affected by their scores on high, average and low levels of achievement motive. (xiii) High, average and low levels of affiliation motive significantly affected the academic achievement of high school boys; however, it did not affect high school girls' academic achievement. (xiv) High, average and low levels of power motive did not affect the academic achievement of either high school boys or girls significantly. (xv) There was no significant interaction of high, average and low levels of achievement motive and affiliation motive,

or achievement motive and power motive, or affiliation motive and power motive, and achievement motive, affiliation motive and power motive scores on the academic achievement of either high school boys or girls.

964. GEORGE, E.I., *A Comparative Study of the Adjustment and Achievement of 10 Years and 11 Years Schooling in Kerala State*, Dept. of Psy., Ker. U., 1966 (UGC-financed)

The study intended to compare pupils who had not studied in earlier classes ( $Y_1$ ), pupils in 10-year stream ( $Y_2$ ), pupils in 11-year stream ( $Y_3$ ) and pupils in 12 year-stream ( $Y_4$  repeaters) on adjustment and achievement.

Using stratified random sampling procedure, pupils of Standard X were drawn from fourteen schools. They were tested with two intelligence tests (verbal and non-verbal), two personality tests (covering the dimensions of extraversion and neuroticism), two adjustment inventories (concerning the areas of home, health, social, emotional and school adjustment) and general data questionnaires. Their SSLC marks were also obtained. The groups were compared with the analysis of variance and chi-square test.

The main findings of the study were: (i) The boys and the girls in the classes were equally affected by factors like promotion. (ii) Economic and educational status of fathers was related to the progress of the pupils since the groups were found to be significantly different on these variables. (iii) SSLC result showed the superiority of  $Y_1$  group over all the other groups. (iv)  $Y_1$ ,  $Y_2$  and  $Y_3$  groups had significantly higher scores than  $Y_4$  but did not differ among themselves. (v) The pupils with high intelligence were identified as better adjusted and higher achievers in all the groups studied. (vi) Extraversion was related to only a few areas in adjustment and had no influence on achievement. (vii) The less neurotic were better adjusted in all areas. (viii) Neuroticism had no significant influence on achievement. (ix) Interaction effect of intelligence and streams on adjustment scores was significant in school and health adjustment.

965. GHUMAN, M.S., *A Study of Aptitudes, Personality Traits and Achievement Motivation of Academic Over-achievers and Under-achievers*, Ph.D. Psy., RSU, 1976

The major objectives of the investigation were: (i) to

ment. Two groups of students were isolated, successful and failures in both the subjects. Thus, 200 passing and 150 failing in English and 150 passing and 175 failing in mathematics were selected.

The major findings of the study were: (i) The factors that played a vital role for learning English were intelligence, English vocabulary, knowledge of grammar, comprehension, spelling, pronunciation, speed and legibility of handwriting, the status of English in the family, extra reading in English and the quality of the teacher. (ii) Factors that played a vital role in learning mathematics were intelligence, abstract reasoning, numerical ability, mathematical background, knowledge of mathematical concepts, rules and principles, attitude towards mathematics, degree of motivation, study hours and the status of mathematics in the family.

**973. JAIN, S.S.,** *A Study of the Impact of Reading on the Achievement of Pupils of Class VII in Different School Subjects*, Ph.D. Edu., SPU, 1981

The major objectives of the investigation were: (i) to construct and standardize a silent reading comprehension test for the pupils of Class VII for using it as a tool for the present study, (ii) to provide schools with a valid and reliable tool to measure silent reading comprehension in Gujarati at the secondary school entrance stage, (iii) to establish norms of reading comprehension in Gujarati for Class VII, (iv) to determine the validity and reliability of the tool, (v) to study the impact of reading on pupils' achievement in different school subjects, (vi) to study the impact of reading ability with regard to the area differences, (vii) to study the effect of sex, and socio-economic status on reading comprehension, and (viii) to study the relationship of reading ability and reading speed with the achievement of pupils in different school subjects.

A silent reading comprehension test was prepared by the researcher. The test-retest reliability was 0.91 and the split-half reliability was 0.94. For the studies on the impact of reading, factorial design was the most suitable as two or three independent variables were studied simultaneously. Two factorial designs were prepared for the purpose of the present study—one was a  $2 \times 2 \times 3$  factorial design (sex, area, levels of reading), and the second was a  $2 \times 2$  factorial design (reading, SES of parents). Construct validity and concurrent validity were attempted to determine the validity of the reading comprehension test.

Some of the findings of the investigation were: (i) Per-

formance in all school subjects taught through the mother tongue was positively related with reading comprehension. (ii) The reading speed also indicated positive relationship in the achievement of school subjects. (iii) The achievement of the pupils from urban areas was better than that of the pupils from rural areas in Gujarati, social studies, science and mathematics. (iv) The achievement of the pupils with good reading comprehension was better in all the four subjects under study than that of normal and poor readers. (v) There was no sex differences in the achievement in the subjects under study. (vi) The socio-economic level of the parents had a great impact on the pupils' achievement in Gujarati, social studies, science and mathematics. The pupils belonging to the upper SES achieved better than the pupils whose parents belonged to the middle and lower socio-economic levels, while the pupils from the middle socio-economic levels scored better than those with lower socio-economic status of parents, in all the subjects. (vii) The poor readers of rural areas (boys) achieved better than the poor readers (boys) from urban areas and even the poor readers (girls) of rural areas, achieved a little better than the poor readers (girls) of urban areas. (viii) The boys with poor reading comprehension from rural areas were better than those from urban areas in mathematics; the same was the case with the girls. Even in the case of the normal readers, the girls from rural areas achieved better than the normal readers (girls) from urban areas in mathematics.

**974. JOSEPH, T.T.,** *A Study of Some Predictors of Achievement in Chemistry at the Pre-degree Level*, Ph.D. Edu., Ker. U., 1979

The objectives of the study were: (i) to find out the association between each of the independent variables and different achievement levels in chemistry (high, average and low achievers) in terms of the ability of each of the independent variables to discriminate between the different achievement levels compared in pairs, (ii) to find out the degree of association between each of the independent variables and achievement in chemistry, achievement in terms of correlations and arrange the independent variables in terms of their efficiency to predict achievement in chemistry, (iii) to develop an equation (or equations) to predict achievement in chemistry using efficient predictors identified, and (iv) to obtain factor structures in terms of the ten variables (one dependent and nine independent) for two extreme achievement levels in chemistry, and see how the struc-

tures obtained for the extreme groups differ from the structure obtained for the general sample.

The study was conducted on a representative sample of 560 pre-degree students of Kerala. The ten variables which were measured using tests of accepted validity and reliability were number series, formulation, spatial ability, verbal comprehension and interpretation and critical thinking under cognitive variables, attitude towards science, science interest, personal adjustment and social adjustment under affective variables and achievement in chemistry as dependent variable. The measures were analysed using t-tests, product moment coefficient of correlation, multiple prediction equations and factor analysis.

The major findings of the study were: (i) All the nine independent variables discriminated between the high achievers and the average achievers, the average achievers and the low achievers and the high achievers and low achievers. (ii) All the nine independent variables correlated significantly with achievement in chemistry at the pre-degree level. (iii) The multiple coefficient of correlation between achievement in chemistry and the best three predictors, namely, spatial ability, number series and formulation was 0.7048, indicating that around 49 per cent of the variance of the criterion could be accounted for by the three predictor variables. (iv) The factor structures for the high achievers, the low achievers and the total sample revealed significant differences between different groups, which implied that achievement differentials affected the factor structures obtained with respect to the ten variables under study.

\*975. JOSHI, S.P., *A Study of Verbal Creativity in Marathi Language in relation to Achievement in Marathi and Environmental Factors of the Students as well as Teaching in High Schools*, Ph.D. Edu., Bom. U., 1981

The main objectives of the investigation were: (i) to construct and standardize a battery of tests of creativity in Marathi language, and to judge the total creativity, (ii) to study the correlation between the total creativity score and the marks obtained in Marathi language (at the S.S.C. level), the total creativity score and the essay performance, and the total creativity score and the environment, (iii) to find out whether the students of urban areas were more creative than the students of rural areas, (iv) to observe the importance given by Marathi subject teachers for creativity, and (v) to judge the effect of environment on creativity.

The method of library research and documentary analysis was used for the historical retrospect of verbal creativity. The descriptive statistical method was used to investigate the total verbal creativity of students in high schools. The tools employed were creativity tests, a questionnaire and checklists. The creativity test used was prepared by the investigator for the Marathi-speaking students, comprising six parts. The test-retest reliability coefficient of the six subtests varied between 0.70 and 0.98. The test possessed a validity coefficient of 0.93. A sample of about 600 was selected from and around the urban and the rural areas of Bombay and Pune.

The main findings of the investigation were: (i) The results for the urban areas deviated from those of the rural areas in some variables. (ii) For the urban areas, there was significant relationship between the achievement scores and the essay performance. It could be said that in the urban areas high achievers were also highly creative. (iii) From the questionnaire, no significant relationship between environment and other variables was found. (iv) For the rural areas, there was low relationship between the achievement score and the creativity score. Thus, the rural-area students might be low achievers but they scored high in creative power. (v) The results of environmental factors and other factors for the rural areas were similar to those of the urban areas. (vi) Factors supporting creativity were power of artistic or literary expression, ability to structure and acquired expressive skill.

\*976. KATTIYAR, P., *A Study of Cognitive Functions in relation to Achievement in Mathematics at High School Stage*, Ph.D. Edu., Gor. U., 1979

The objectives of the study were: (i) to isolate cognitive functions which influenced achievement in mathematics, (ii) to compare the scores in high school mathematics of boys and girls (offering general and advanced course) in the tests of cognitive functions and mathematics attainment, (iii) to work out regression coefficients and equations for boys and girls separately from their scores in the predictors, namely, tests of cognitive functions and the criterion, namely, achievement test in mathematics, and (iv) to find out the factors responsible for the functional relation between cognitive functions of boys and girls.

Five tests on cognitive functions, namely, abstract reasoning, numerical reasoning, numerical ability, space relation and substitution of symbols, of which two



were prepared by the investigator and three adapted from DAT, served as predictors and the mathematics achievement test prepared by the investigator was used as a criterion. After the tryout, the above tests were administered to a sample of 1,000 girls and boys of Class X of whom 300 boys were studying general mathematics and 300 advanced mathematics and 200 girls were studying general mathematics and 200 advanced mathematics. The data were analysed with the help of mean, standard deviation, critical ratios, regression coefficients and factor analysis.

The study revealed no significant difference in the average scores of boys and girls studying advanced mathematics on the achievement test. Girls with advanced mathematics course scored better on the tests of cognitive functions. The factors loadings suggested that numerical reasoning and numerical ability occupied prominent place among the five cognitive functions. The regression equations were found to be helpful in predicting scores of advanced mathematics for boys and girls.

977. KHANNA, M., *A Study of the Relationship between Students Socio-economic Background and Their Academic Achievement at Junior School Level*, Ph.D. Edu., Kan. U., 1980

The objectives of the study were: (i) to find out the extent to which social structure, social process, social control, social change and community as a whole including the child's family education, assist or hinder the academic achievement of the children, and (ii) to find out the degree of relationship between socio-economic status and the pupil's academic achievement income-, area-, sex- and school-wise.

The sample comprised 1,000 students of Classes VI, VII, VIII (among thirty schools of rural and urban areas). Information schedules for parents, teachers, and students of Classes VI, VII and VIII, separately, were developed and used for data collection. The academic achievement scores of half-yearly and annual examinations of the students of Classes VI, VII and VIII were used. The chi-square and contingency of correlation were used for analysing the data.

The findings of the study were: (i) Socio-economic status was positively and significantly related with academic achievement. (ii) The student's achievement was related with his socio-economic status irrespective of whether his home town was a village, a town or a city. The correlation was more consistent in urban than in rural areas. (iii) The academic achievement of rural and

urban students was closely related with their guardians' income. (iv) There was a positive and significant correlation between socio-economic status and academic achievement in the case of boy and girl students of rural and urban areas. (v) The academic achievement of the students of different types of schools was significantly related with the socio-economic condition of their families. (vi) The academic achievement of the children of educated parents, illiterate parents and educated mothers was significantly correlated with the socio-economic status of the family. (vii) The scholastic achievement of the students of junior high school classes was directly and significantly related with their family's socio-economic status.

978. KOUL, L., *Personality Needs of High and Low Achievers in Mathematics*, HPU, 1978

The study was designed to make a comparison between low and high achievers in mathematics on a number of Murray's personality needs to see if these needs could be used as possible non-cognitive predictors of achievement in mathematics.

The initial pool of 1,030 students was selected from six randomly chosen boys' higher secondary schools of Ajmer. The sample comprised 200 high-achieving students and 130 low-achieving students equated on socio-economic status selected from the initial pool of 1,030. High and low achievers were selected on the basis of marks in mathematics at the public examination. The tools consisted of Socio-Economic Status Scale, Questionnaire of Jalota, and others and Hindi version of Edward's Personal Preference Schedule (EPPS). Means, standard deviations and critical ratio were the statistical techniques used for data analysis.

The major findings of the study were: (i) The high achievers in mathematics differed significantly from low achievers on eight of Murray's needs. The students belonging to the high achieving group on an average were high on the scale of Order, Dominance, and n-Endurance and low on the scales of n-Exhibition, n-Succorance, n-Heterosexuality, and n-Aggression in comparison with the low-achieving group. (ii) The low achievers in mathematics were more exhibitory, succorant, heterosexual and aggressive. (iii) Several scales of EPPS discriminated between the high and the low achievers in mathematics and could be used as possible non-academic predictors of achievement in mathematics.

979. KULSHRESHTA, L., *A Study of Certain Factors*

*related to Differential Patterns of Achievement among Bright Students, Ph.D. Edu., Agra U., 1981*

The major objectives of the investigation were: (i) to find out the effect of vocational interest on the achievement of bright students, (ii) to study the relationship between the achievement and personality characteristics of bright students, and (iii) to find out how parental attitudes, family background and basic skills influenced academic achievement of bright students.

The sample comprised 276 students selected on the basis of scores on General Mental Ability Test of Joshi, out of a population of 1,050 first year science and mathematics students of intermediate colleges of Agra and Mathura. The tools used were General Mental Ability Test of Joshi, Vocational Interest Record of Kulshrestha, High School Personality Questionnaire by Kapoor, Family Relation Inventory by Sherry and Sinha and other tests to measure basic skills in mathematics and science. Analysis of variance and t-test were the statistical techniques used for analysing the data.

The main findings of the investigation were: (i) The vocational interest in agricultural, persuasive, social, and household areas had a changing role in scholastic achievement. Less vocational interest in the above areas helped in achieving high, whereas greater interest was detrimental to achievement. (ii) The bright under-achievers showed greater vocational interest in artistic area and agricultural area than other students. Bright under-achievers in mathematics were more interested in vocations related to household area than normal achievers. (iii) The bright under-achievers in mathematics were more warm-hearted than normal achievers and bright normal achievers in English were more conscientious than bright under-achievers. (iv) The bright, normal and under-achievers in science, mathematics and English differed in their attitude to parents whereas the common students did not. (v) The bright normal achievers in English possessed significantly higher basic skills in English than bright under-achievers in English. (vi) Under-achievement was related, to some extent, with economic conditions at home but not with the personal health of the student. (vii) Under-achievement was directly related with the parents' cares concerning collecting fees and other facilities for their child. (viii) Under-achievers lived in more noisy houses.

**980.** KUMAR, A., *The Relationship between Personality and Mental Ability Variables and Achievement through Programmed Instructional Styles, Ph.D. Edu., AMU, 1981*

The objectives of the study were to investigate the relationship between (i) some personality (general anxiety and extraversion) and mental ability (intelligence and creativity) variables, and (ii) achievement through linear and branching styles of programming and the expository method of teaching.

From the three intermediate colleges in the urban areas of western Uttar Pradesh 282 students studying in Class IX constituted the sample of the study. Suitable measures of general anxiety, extraversion, intelligence and creativity were administered to the whole sample. The students were divided into three equal groups. One of the groups received instruction through linear and the other through branching styles of programmes. The third group was taught through the expository method of teaching. Measures of central tendency constituted the subject matter of the instructional programmes. Linear and branching styles of programmes were developed and validated for the study. A posttest was administered after the instructional programme.

Each of the three groups taught through the three instructional treatments was divided into high and low groups on the basis of one of the personality and mental ability variables. The three high and the three low groups were also matched on the basis of that variable. The means of the posttest scores obtained by the students in the high and the low groups on each variable taught through the three treatment modes were adjusted for previous achievement in mathematics and intelligence using analysis of covariance. Comparisons of these adjusted posttest score means were made for different pairs of treatment modes to study the interaction between different personality and mental ability variables and achievement through different treatment modes for assigning treatment modes for optimal achievement. For this purpose, the graphs of adjusted posttest means of the students in the high and the low groups on each personality and mental ability variable for different pairs of treatment modes were drawn. If the two treatment lines crossed and the posttest means for the students either in the high or the low group on any variable differed significantly, the interaction was considered significant (disordinal). This was regarded as sufficient evidence for assigning treatment mode for optimal achievement.

The major findings for maximal achievement were: (i) High intelligence students should be taught through the branching style of programme and the low intelligence students through the expository method of teaching. (ii) High creatives should be taught through either of the programming styles, preferably through the branching

style and low creatives through the expository method of teaching. (iii) High general anxiety students should be taught through the expository method of teaching and low general anxiety students through either of the programming styles, preferably the branching style. (iv) High extraversion students should be taught through the linear style of programming and low extraversion students through the branching style of programming.

**981.** MAKHIJA, G.K., *Interaction among Values, Interests and Intelligence and Its Impact on Scholastic Achievement*, Ph. D. Psy., Agra U., 1973

The study was undertaken to inquire into the interaction among values, interests and intelligence and its impact on scholastic achievement. In addition to the main effect of each variable, the effects of first order interaction between the three possible pairs and second order interaction among the triads of variables were also examined. The study consisted of sixty experiments, each dealing with a triad of one of the ten interest, one of the six values and intelligence.

A stratified random sample of 310 first year male students studying in the faculties of arts, science, commerce and agriculture was drawn. The tools used were Ojha's Hindi adaptation of Allport-Vernon-Lindzey Study of Values, Chatterji's Non-language Preference Record, and Jalota's Group Test of General Mental Ability. Analysis of variance and t-test were used for data analysis.

The major findings of the study were: (i) Intelligence had a significantly positive influence on scholastic achievement. (ii) Students who were not oriented to political value, exploited their mental ability to much less extent than those who were highly oriented to it. (iii) Students who valued beauty, form, symmetry and grade in their life developed vocational interests in literary pursuit and avoided, as far as possible, sports and outdoor activities. (iv) Students who were oriented to practical and utilitarian view of life tended to exert their intellectual capacities more in the mechanical fields of vocations. (v) Students who valued power, competition, renown, etc., in their life utilized their mental abilities to excel in crafts and scientific studies. (vi) Students whose ideal of life was to probe into the mysteries of God, exploited their intelligence in the fields of science and medicine. (vii) Adolescent boys motivated by affection, friendship and love of people used their intelligence in household activities. (viii) Those who cherished search of truth as the dominant ideal of life would not divert their

capacities to mechanical occupations. (ix) None of the six values had any significant influence on scholastic achievement. (x) The motive to gain power as a means to dominate, control and influence others accelerated scholastic achievement. (xi) Intelligent students interested in science and medicine found religious value helpful in their performance but obstructive if they were interested in recreational activities. (xii) Students highly interested in sports seldom proved high achievers in schools. Interest in the medical field had no relevance to scholastic achievement; their interest was mostly induced extraneously by family and society. There was affinity between religious value and technical interest and they jointly influenced the calibre of the student in respect of his scholastic achievement.

**982.** MENON, P. A., *A study of Creativity in English Language of Students of the Higher Secondary Level in Some English-medium Schools in Delhi in relation to Their Intelligence, Achievement and Language Abilities*, Ph.D. Edu., Del. U., 1980

The objectives of the investigation were: (i) to examine the existence and extent of creativity in the English language, (ii) to study the differences in creative ability among boys and girls, and (iii) to see the creative expression in relation to intelligence, achievement and language ability of children.

A sample of 301 (165 girls and 136 boys) was selected from six English-medium schools. The sample was representative of the total number of schools in Delhi that came under the administrative control of the Council for the Indian School Certificate Examination. The students were selected from Class VII as it was felt that children at this age were more spontaneous, thought more independently and were less inhibited in expression. For collecting data, the Language Ability Test to measure the students' language ability in vocabulary, grammar, comprehension and composition, Standard Progressive Matrices Test to measure the intellectual capacity of the students and creativity tests 1 and 2 to measure the creative ability of the students in terms of fluency, flexibility, originality and elaboration were administered to the students. The context of text 1 comprised situations selected from the books the children had read outside their course of study, while that of test 2 was based on the poem 'The Solitary Reaper' by William Shakespeare. The marks obtained by the students in the annual examination were taken as the achievement scores. The



analysis of data was carried out by computing the means, significance of difference between means, standard deviations, correlations, multiple regression and analysis of variance.

The major findings of the investigation were: (i) Creativity correlated highest with language, the next being achievement (0.45), followed by intelligence (0.29). (ii) Correlation of language and achievement was higher (0.56) than that of language and intelligence (0.32). (iii) Intelligence correlated highest with language (0.32), creativity (0.29) and achievement (0.24).

**983.** MENON, P.N., *Performance of Students at Polytechnics in relation to Their Academic Achievements, Intelligence, Differential Aptitudes, Adjustment and Aspiration Level*, Ph.D. Edu., MSU, 1982

The major objectives of the study were: (i) to find out whether general mental ability (intelligence) had any effect on the performance of students in polytechnics, (ii) to find out whether general adjustment was related to the performance of students in polytechnics, (iii) to find out whether the level of occupational aspiration influenced students' performance in the polytechnic examination, (iv) to examine the effects of differential aptitudes on students' performance in polytechnics, (v) to find out whether students' achievement in the qualifying examination (S.S.C.) was helpful in predicting their performance in the polytechnic examination, (vi) to find out whether the aspiration level of students had any relationship with their performance in the polytechnic examination, and (vii) to find out the cumulative effect of all the variables on students' performance through the technique of multiple regression analysis.

The sample consisted of 300 students belonging to two government polytechnics in Haryana. The tools used for data collection were the General Mental Ability Test of Tandon and Jalota, the Adjustment Inventory developed by Patel and others, the Occupational Aspiration Scale of Grewal, the Differential Aptitude Test Battery (DAT) and the Test for Level of Aspiration developed by Shah and Bhargava. The aggregate marks obtained by the students in their matriculation examination were taken as the measure of their achievement. The scores obtained by the students in their final examination of the first year were taken as the measure of their performance in the polytechnics. Data were processed using t-test, product moment correlation and multiple regression analysis.

The major findings of the study were: (i) Eight factors were differentiated between high and low performance. Some of these factors were: general mental ability, space relations, numerical ability, mechanical reasoning, language usage (spelling), language usage (grammar) and academic achievement. (ii) In the correlational study, only seven variables were significantly related to the students' performance. They were: numerical ability, general mental ability, abstract reasoning, mechanical reasoning, academic achievement, language usage (spelling), and space relations. (iii) The multiple correlation analysis indicated six variables which together accounted for 38.23 per cent of the variance in the criterion variables. These six variables were: numerical ability, general mental ability, abstract reasoning, mechanical reasoning, academic achievement and language usage (spelling).

**984.** MENON, S.K., *A Comparative Study of Personality Characteristics of Over-achievers and Under-achievers of High Ability*, Ph.D. Psy., Ker. U., 1972

The study intended to find out the relationship between under-achievement and (i) certain personality characteristics such as social activity, extraversion-introversion, tolerance, maladjustment and masculinity-femininity, (ii) certain motivational traits like academic interest, general ambition, persistence and endurance, and (iii) areas of interest like outdoor, aesthetic, scientific, mechanical, persuasive, clerical and social service. The study also investigated the influence of social and demographic factors on the problem of under-achievement. The hypotheses tested were: (i) There are significant differences between superior ability over- and under-achieving groups in personality characteristics, motivational traits and interest patterns. (ii) There are significant differences between the two groups in socioeconomic and other variables selected.

The tools used in the study were: two parallel forms of an intelligence test, General Mental Ability Test—Verbal Forms A and B, a personality inventory, a motivational inventory, an interest inventory and a general data questionnaire. The marks obtained by the students at the S.S.L.C. examination were taken as indices of achievement. Over and under achieving groups of students were selected from a stratified random sample of 2,400 students studying in Class X, selected from twenty-one schools in Trivandrum Educational District. The schools were selected from a total number of seventy-two, giving proportional weightage to rural and

urban schools, and boys', girls' and co-educational schools. The sample was made up of 1,245 boys and 1,155 girls. The data were analysed by calculating means and S.Ds. and groups were compared by testing the significance of differences between the means by applying the chi-square test.

The main findings of the study were : (i) Over-achieving groups of superior and general ability and of boys and girls were less extrovert and less maladjusted than under-achievers and showed greater academic interest and endurance. (ii) Over-achieving girls of general ability showed strongest interest in aesthetic, social and mechanical activities. (iii) demographic factors and socio-economic status markedly influenced over- and under-achievement. Higher occupational and educational level of father, educational level of mother, family income and parental attention were related to high achievement, but the extent of relationship was not similar for boys and girls. (iv) Job aspiration, educational aspiration and general ambition were strongly associated with high achievement, particularly for girls. (v) Urban residence was related to high achievement.

**\*985.** MISHRA, S.P., *A Comparative Study of High and Low Achievers in Science, Commerce and Arts on Creativity, Intelligence and Anxiety*, Ph.D. Edu., Raj. U., 1978

The study aimed at investigating the relationship of creativity, intelligence and general anxiety separately among the high- and the low-achieving students in science, commerce and arts.

The stratified random sampling technique was used to draw a sample of 600 cases (200 from each stream) for comparing the high and the low academic achievers of arts, commerce and science on creativity, intelligence and general anxiety and to find out intervariable coordination between creativity, intelligence and general anxiety. In all, 400 students, (200 from each sex) for comparing the high and the low achievers sex-wise and 300 students (100 from each stream) for formulating regression equation for predicting academic achievement were randomly selected from the secondary schools of Rajasthan. The tools used for the collection of data were Mehdi's Test of Creativity, a Verbal Test of Creativity constructed by the investigator, Raven's Standard Progressive Matrices and Sinha's General Anxiety Scale. Critical ratio was employed to analyse the data. Analysis was also presented through graphs.

The findings of the study were: (i) The high achievers

in arts were higher on the level of creativity than the low achievers in arts. (ii) The high achievers in commerce were higher as regards the level of creativity than the low achievers in that stream. (iii) The high achievers in science were higher on the level of creativity than their low-achieving counterparts. (iv) The high-achieving boys in arts had a higher creativity than their low-achieving counterparts. The high-achieving girls in arts were significantly higher on the level of creativity than the low-achieving girls. (v) The high-achieving boys in science were higher on the level of creativity than their low-achieving counterparts. The high-achieving girls in science were higher on the creativity level than their low-achieving counterparts. (vi) The high achievers in arts were higher in their level of intelligence than the low achievers. (vii) The high achievers in commerce were higher in their level of intelligence also. (viii) The high achievers in science were higher in intelligence than the low achievers. (ix) The high-achieving boys in arts were definitely higher in the level of intelligence than their low-achieving counterparts. (x) The high-achieving girls in arts were higher in the level of their intelligence than their low-achieving counterparts. (xi) Intelligence and creativity were statistically correlated among the high achievers in science and commerce and the low achievers in arts. (xii) Intelligence and general anxiety exhibited no relationship in any of the streams or levels of achievement except the low achievers in science. (xiii) Creativity and general anxiety were related in the case of the low achievers in commerce and science only. (xiv) The science students were more creative, intelligent and low in general anxiety than their counterparts in other streams. The arts students were low in creativity and intelligence but high in general anxiety. The science students exhibited more creative talent and low general anxiety.

**\*986.** MISHRA, A.A., *Study of Performance-discrepancy of Science Teachers and Its effect upon the Achievement of Students in Science*, D.Phil. Edu., Garh.U., 1982

The main objectives of the study were: (i) to find out difference in the perception of supervisory staff and the self-perception of science teachers about expected performance of the latter, (ii) to find out the performance-discrepancy of science teachers about their performances, and (iii) to assess the effect of performance-discrepancy of science teachers on the achievement of students in science.

The sample consisted of 109 science teachers teaching Class IX, both male (93) and female (16), drawn from urban boys, urban girls, rural girls and rural co-educational higher secondary schools on the basis of the stratified random sampling technique. Ninety-four members of the supervisory staff, 72 teacher-educators, 12 science promotion officers and 10 members of the State Institute of Science Education were selected randomly. The rating scale for expected performances of science teachers, schedule for actual performance of science teachers, achievement test and other tests were used for data collection. Chi-square test was used to analyse the data.

The findings of the study were: (i) The supervisory staff perceived the performances related to the dimensions of teaching, planning, correlation in science, homework, science library and co-curricular activities more favourably, whereas science teachers perceived classroom teaching and laboratory organization more favourably. (ii) There were significant differences between the expected and the actual performances of science teachers in relation to performances in all aspects. (iii) The amount of discrepancy was more in most expected and expected performances, whereas it was low in less expected performances. (iv) The performances in which difference between the discrepancy of male and female science teachers was observed, were mainly in the dimensions of classroom teaching, demonstration and laboratory organization. The performance discrepancy was more among female science teachers than among male science teachers. (v) The dimensions of laboratory organization, co-curricular activities and science library revealed performance discrepancies between urban and rural science teachers. The discrepancy in all these dimensions was more prominent among rural science teachers than their urban counterparts. (vi) An inverse relationship between the performance discrepancy of science teachers and the achievement of science students was identified. (vii) The main causes of performance discrepancy were in the area of unawareness of the performances, lack of time to organize the performances and over-crowding. The other related causes within school conditions, e.g., lack of science materials, lack of money, non-cooperative attitude of school authorities and improper and inadequate teacher training were equally responsible to make the science teachers non-performers. (viii) As the curriculum in science was dominated fully by external examination system, the entire performance of science teachers was identified to be dominated by examination result syndrome. They had shown least interests in conducting co-curricular ac-

tivities, investigatory projects and the involvement of students in teaching-learning process.

**\*987.** MISRA, K.S., *Effect of Children's Perception of Home and School Environments on Their Scientific Creativity*, Ph.D. Edu., Raj. U., 1982

The major objectives of the study were: (i) to find out the effects of home and school environments on the development of scientific creativity, (ii) to find out the extent to which home environment was related to scientific creativity, (iii) to find out how school environment influenced scientific creativity, (iv) to find out how the various aspects of home environment (permissiveness, nurturance, reward, punishment, conformity, control, rejection, projectiveness, deprivation of privileges and social isolation) and school environment (creative stimulation, cognitive encouragement, acceptance, permissiveness, rejection and control) contributed to the prediction of creative behaviour in science, and (v) to find out whether children with high and low scientific creativity differed in their perceptions of home as well as school environments.

The sample consisted of 197 students of intermediate classes (medical group) living at the district headquarters of Agra, Manipuri, Farukhabad and Kanpur districts. The tools used for data collection were Tests of Scientific Creativity, Home Environment Inventory and School Environment Inventory constructed and standardized by the investigator, Jalota's Group Test of General Mental Ability, Cattell's Culture Fair Test of Intelligence Scale III, Form A, Socio-Economic Status Scale Questionnaire of Jalota, Pandey, Kapoor and Singh, and Maudsley Personality Inventory adapted by Jalota and Kapoor. Kruskal-Wallis one-way analysis of variance, Kendall's 'tau coefficient of correlation', Kolmogorov-Smirnov two-sample test, t-test, product moment correlation and contingency coefficient were employed to analyse the data.

The main findings of the study were: (i) Boys did not differ significantly from girls with respect to inquisitiveness. Girls excelled boys in overall scientific creativity and influence, flexibility and originality. Girls with high scientific creativity perceived more stimulation in their homes than girls with low scientific creativity. Boys with high scientific creativity perceived less social isolation in their home environment. (ii) Significant relationship existed between perceived school environment and originality among boys, perceived home environment and overall scientific creativity among girls, and perceived



home environment and inquisitiveness among boys. (iii) Relationships between the various aspects of school environment, viz., creative stimulation, cognitive encouragement, permissiveness, acceptance, control, and rejection, and girls' scientific creativity were not significant. For boys, the relationships of creative stimulation with flexibility and originality, cognitive encouragement with overall scientific creativity, originality and inquisitiveness aspects of it, and permissiveness with originality were significant but negative. (iv) For girls, significant positive relationships existed between increasing levels of nurturance and overall scientific creativity/fluency/flexibility/originality, decreasing levels of protectiveness and inquisitiveness and decreasing levels of rejection and inquisitiveness. (v) For boys, negative relationships existed between decreasing levels of protectiveness or conformity and inquisitiveness. (vi) Girls' perceiving high stimulation in home environment and normal stimulation in school environment obtained higher scores on overall scientific creativity and originality aspects of it.

988. MUKHERJEE, B.N., *Prediction of Grades in Introductory Psychology from the Taylor Manifest Anxiety Scale Using a Multivariate Covariance Adjustment Method*, ISI, Calcutta, 1969

The study was designed to investigate the relationship between anxiety as measured by Taylor Manifest Anxiety Scale (MAS) and attainment in an introductory psychology course.

The hypothesis tested was that the contrast between high and low anxious subjects on the attainment variable will be significant only when differences between these two groups on a number of ability and self-image variables were held constant statistically. Analysis of variance with multiple covariance adjustment (MANCOVA) was done. The subjects were fifty-one male and thirty-six female students enrolled in two sections of an introductory psychology course offered during the fall 1963 semester at the university. The subjects were allocated to one of the two anxiety groups on the basis of their total MAS scores. The two anxiety groups were also accidentally equated in terms of verbal fluency as measured by PMA Vocabulary Test, age and need for achievement. Control for other ability and self-rating measures was accomplished through the MANCOVA technique.

The major findings of the study were: (i) The scores obtained on the MAS were significantly related to grad-

ing in an introductory psychology course only when attempt was made to eliminate the effects of ability. (ii) The results of MANCOVA suggested a positive relationship between the scores on MAS and psychology grades and indicated that significant predictions of psychology were possible with MAS; a multiple regression analysis revealed that MAS hardly added any new information for prediction when it was used in conjunction with PMA Vocabulary and Gestalt Transformation Tests. (iii) The importance of controlling the differences between the anxiety groups with regard to a number of ability and self-evaluation variables when prediction of academic achievement was to be made from non-intellectual factors was clearly demonstrated.

989. NAGPAL, R., *A Study of Non-intellectual Characteristics of Over- and Under-achieving Engineering Students*, Ph.D. Human. I.I.T., New Delhi, 1979

The objectives of the investigation were: (i) to study the incidence of such students as showed high promise at entry but did not materialize it in terms of academic achievement, (ii) to identify the psycho-social factors associated with such under-achievement, and (iii) to compare the over-achieving and the under-achieving to find out the significance of intellectual and non-intellectual factors in determining the performance of both the groups.

The semi-structured psycho-social questionnaire covered a few aspects like socio-economic, developmental, motivational, previous and present adjustment. It consisted of twenty-five items. Almost all the items were adopted from questionnaires by Wig and Nagpal, and Kapoor on the students of the University of Punjab and Edinburgh, respectively. The Students' Personal Problems Index (SPPI) of Wig and Nagpal assessed the presence of emotional difficulties typical to college students, namely, psychologically defensive symptoms related to study, symptoms suggesting emotional and personality conflicts, neurotic symptoms and physical symptoms underlying anxiety. The reliability coefficient by the split-half method varied from 0.65 to 0.83 for the whole instrument and 0.66 to 0.76 for the subscales. Its validity was verified by comparing high and low scores on it in their past and present adjustment. Shostrom's Personality Orientation Inventory consisting of 150 two-choice comparative value and behaviour judgement items was used for measuring self-actualization. Personality characteristics like study habits and methods, ex-

tent of involvement in extracurricular activities, home environment and motivation for taking engineering as a profession as well as reasons for change in the level of achievement were identified through personal interviews. Sixty over-achievers and thirty-seven under-achievers were selected from among the students enrolled in the basic engineering courses at the undergraduate level in 1971 and 1972 in the IIT, Delhi. For comparing the over- and under-achievers on the psycho-social questionnaire, chi-square test was used. The t-test was used to test the differences between the mean scores of the criterion groups on the main scale of the SPPI and all sub scales of the Personal Orientation Inventory. Product moment correlations between the predictor and criterion variables were analysed. The principal components analysis and varimax rotation analysis were also made.

The major findings of the investigation were: (i) Nearly 10 per cent students under-achieved at the IIT, Delhi on the criterion of grades obtained in the admission test and the fourth year cumulative grades. (ii) Ability measures accounted for a limited proportion of the total variance in academic achievement. (iii) The prevailing academic adjustment was an important correlate of over-or under-achievement. (iv) Under-achievers reported a greater number of emotional problems typical to the youth. (v) Over-achievers had a personal orientation indicating fuller functioning than average students as a result of which they went through life more independently, had a better realization of the desirable hierarchical order of goals, had a more constructive nature of man and were more successful in striking a balance between play and work. (vi) Academic achievement was dependent on the student's developing an interest in a specific subject during the course rather than his having it as first preference at the time of admission. (vii) Students better adjusted to academic and other aspects of college life exhibited greater interest in the subject matter, had positive attitude towards the requirements of the curriculum and got along well with teachers and peers. (viii) Non-intellectual factors related to acquisition of knowledge resulted in over-or under-achievement. (ix) Socio-economic variables related to students determined selection but were not relevant to subsequent academic performance.

**990.** NAIR, P.N.G., *Impact of Creative Methods of Teaching on the Attainment of Higher Objectives in Science*, Ph.D. Edu., Ker. U., 1978

The major objective of the study was to find out

whether creative methods of teaching physics and chemistry were superior to the traditional methods in attaining higher objectives.

The parallel group experimental design was used. The study was carried out in six secondary schools selected on the basis of stratified random sampling from North Parur and Kodungallur educational sub-districts of Kerala. The experimental and the control groups were equated on the basis of age, sex, socio-economic status, intelligence and school achievement. The experimental group was taught through creative methods and the control group through traditional methods. The topics taught were 'solution' from the chemistry syllabus and 'motion of bodies' from the physics syllabus of Standard VII. Standard Progressive Matrices, Socio-Economic Status Scale of Kuppaswamy, opinionnaire and achievement tests were the major tools used for collecting data.

The major findings of the study were: (i) The creative methods were superior to the traditional methods like verbal illustration and demonstration in attaining higher objectives in science. (ii) The creative methods were superior to the traditional methods for the sub-samples (sex, management of schools and locality of schools). (iii) The creative methods were superior to the traditional methods in the attainment of higher objectives in the case of pupils having different levels of intelligence and socio-economic status.

**\*991.** OJHA, K.P., *A Study of Correlation between Socio-economic Status and Achievement of High School Boys*, Ph.D. Edu., Gor. U., 1979

The main objectives of the investigation were: (i) to identify the nature of relationship between socio-economic status and academic achievement of students, and (ii) to study the functional relationship of academic achievement with parental education, parental occupation and parental income.

In all, 1,050 male students of Class XI belonging to both rural and urban intermediate colleges of Jaunpur district (U.P.) filled the personal information blank which was devised to collect information about the determinants of socio-economic status. The marks obtained in the high school examination served as the criterion for achievement.

The analysis of data revealed a significant positive correlation of 0.34 between achievement and socio-economic status (SES) for rural boys and 0.69 for urban boys. The achievement of rural boys was found to be better than that of urban boys. For both rural and urban

students, the t-test analysis led the investigator to conclude that the higher the SES, the better would be the academic achievement of students at the high school level. Parental education, occupation and income were also related with the educational achievement of both rural and urban boys of Class XI.

**992.** PAL, G., *An Enquiry into the Factors Involved in the Learning of Science by Adolescent Pupils*, Ph.D. Edu., Cal. U., 1982

The main aim of the enquiry was to investigate and analyse the different factors or abilities involved in the learning of science subjects with special reference to physics and chemistry by adolescent pupils.

In all, eleven schools in Calcutta and its vicinity were selected by incidental sampling. An intelligence test, Guilford's Problem Solving Ability Test in Arithmetic, an aptitude test, Ballard's Three-Minute Arithmetic Test, and a science achievement test were administered to 200 pre-adult age group students for determining the different factors or abilities in learning science by the adolescent pupils. Correlation matrix and centroid factor matrix were prepared.

The major findings of the enquiry were: (i) There was a common factor in all the five tests where general intelligence or educability played significant roles. (ii) General ability or g factor, scientific aptitude/reasoning, speed and precision and problem-solving ability were significantly responsible for the learning of science. (iii) Students belonging to the advanced schools had done better in science achievement test than those in less advanced schools having the same or more or less identical general ability. (iv) Good schooling, interest and industriousness also played an important role in the learning of science. (v) There was a significantly high positive correlation between the test scores related to the proposed factors and the marks of physics and chemistry in the Higher Secondary Examination conducted by the West Bengal Board of Secondary Education.

**993.** PATEL, R.M., *A Study of General Ability as a Predictor of Academic Achievement of the Pupils of Standards II, III and IV*, Ph.D. Edu., SPU, 1981

The aims of the investigation were: (i) to construct and standardize a suitable non-verbal group test of general ability for pupils of Standards II, III, IV of Gujarat, and (ii) to take up studies on general ability as one of the

correlates of academic achievement by employing analysis of variance with  $2 \times 2 \times 3$  factorial design.

The non-verbal group test of general ability was standardized on a sample of 4,502 pupils of Standard II through Standard IV, selected from various districts of Gujarat, and for the study the sample consisted of 400 pupils. The subjects, language, mathematics, social science and science, were considered the variables of academic achievement. The marks used in the study were those obtained by the pupils of different standards at the school examination. The marks were converted into standard scores. The non-verbal group test of general ability, in pictorial form, consisted of two parts, viz., (i) information part, having thirty-three items and (ii) reasoning part, having twenty-six items. The reliability coefficients of the test, computed by different methods, ranged from 0.84 to 0.96. Validity indices estimated by six different methods ranged from 0.57 to 0.70.

The important findings of the investigation were: (i) There were no significant sex differences with regard to general ability of the pupils of Standard II through Standard IV. (ii) The general ability variable influenced the achievement of the pupils of Standard II through Standard IV in all subjects and in their total achievement. (iii) The interaction between IQ and area variables and area and sex variables influenced the achievement of the pupils of Standard II from urban areas in social science and science and the pupils of Standard III from rural areas in mathematics. (iv) The interaction among IQ, area and sex variables influenced the achievement of the girls (rural) of Standard II in social science and the boys (urban) of Standard II in social science.

**\*994.** PATHAK, U., *Identification of Personality Variables Associated with Creative Writing in Hindi*, Ph.D. Edu., Del. U., 1983

The objectives of the study were: (i) to discover the personality variables which characterize Hindi creative writers, and (ii) to discover the personality variables which differentiate between high creative and low creative individuals.

An initial list of 177 living Hindi writers was prepared on the basis of whether they had been acknowledged by the central or state Sahitya Academies, whether their writings had been published several times by reputed publishing houses or whether their works had been frequently published by standard Hindi journals. The list was given to 120 jurors of whom only 100 responded;



they were asked to draw up a list of fifty creative writers on a three-point scale—highly creative, fairly creative and low creative. The final sample comprised fifty-two living creative writers — forty-three male and nine female. For the purpose of comparison, two sub-groups of high creatives and low creatives were formed on the basis of ranking. The tools used were Rorschach Inkblot Test, 16 PF Questionnaire, Personal Value Questionnaire (Verma and Sherry), Bell Adjustment Inventory (Adult Form), Cattell's Culture Fair Scale III (Hindi version by Rao) and a biographical history interview schedule prepared by the investigator.

The findings of the study were: (i) The creative writers showed greater ability to view and handle the darker side of life and consequent anxiety and tension and were sensitive to colour. (ii) The total sample was more intelligent, more reserved and detailed, more assertive, more sober and taciturn, more tenderminded and sensitive, more natural and genuine, more imaginative and more self-assured though more jealous and suspicious. (iii) Compared to the average, they were more experimenting, preferring their own decisions, were more careless of protocol, manifested less ego strength and seemed to get upset more easily and appeared more tense in comparison to the general Indian population. (iv) Aesthetic value was the greatest, followed by the love for beauty, knowledge and economic value. (v) They were better adjusted, showed more homogeneity in home, health and occupational areas and less adjustment and greater homogeneity in social and emotional areas. (vi) Being less reconciled to social norms they had more emotional problems. They were more non-satisfied in their occupations, home and health. (vii) Correlations between each area of adjustment and creativity were negative but they were not maladjusted. (viii) Compared to an average population, they showed higher intelligence. Only one case indicated high intelligence and high creativity and another below-average intelligence but high creativity; no creative writer had high intelligence. (ix) The high creatives were better able to handle anxiety-producing situations and were more sensitive and quicker in their reactions to environmental stimuli than the low creatives. (x) The low creative group was more at ease with emotions and feelings. (xi) The high creatives were better able to perceive a totality and had a wider perspective. (xii) The high creatives were more excitable and impulsive. (xiii) Ten out of the sixteen factors differentiated both the groups. (xiv) The high creatives were better adjusted. (xv) The high creatives as a group were higher on intelligence. (xvi) On hereditary factors there was no difference.

**\*995. PATIL, N.,** *Antecedents of Civic Sense Status of High School Finishers*, Ph.D. Edu., Nag. U., 1982

The investigation aimed at identifying some of the antecedents of civic sense to help the school in discharging its responsibility. Sex, ordinal position, socio-economic status, intelligence defined as ability to carry on abstract thinking, extraversion and neuroticism as fundamental dimensions of personality and social desirability (need for approval) had been picked up for this purpose.

The control variable measured was drawn from the outcome of the efforts of the measurement of children's civic attitudes, endeavour of the international association for the elevation of educational achievements. The Junior EPI (Eysenck's Personality Inventory), Marlowe-Crowne Social Desirability Scale, Abstract Reasoning Test from the DAT and one SES Scale published by Psycho-Centre were the other measures used. The sample was drawn from Classes X and XI—500 each with equal number of boys and girls. The data collected were subjected to statistical analysis employing relevant statistics as per indications of the statement of the different hypotheses. Means, standard deviations, analysis of variance, t-test, Z-test and chi-square tests were used.

The interpretation and discussion showed that intelligence, viewed as ability to carry on abstract thinking, and personality, represented by fundamental dimensions like extraversion and neuroticism, seemed to account for variation in respect of civic sense/political socialization. However, the ordinal position, sex and need for approval did not seem to have any role to play in deciding civic sense/political socialization status of different individuals. It was felt that those interested in changing the state of affairs in respect of discharge of social and national responsibility by our young men educated up to the secondary level, would be successful at least to some extent, if they showed due consideration for socio-economic status, intelligence and basic personality standing of the individuals. More studies in this direction were advocated.

**\*996. PONNUSWAMI, S.,** *A Study of Programmed Instruction and Creativity in Second Language Learning*, Ph.D. Psy., Del. U., 1980

The general objectives of the investigation were: (i) to study the differences in language achievement by grouping students on the basis of creativity, intelligence, motivation and achievement levels, (ii) to study the differ-

ences in language achievement of high creatives and low creatives when taught through the programmed instructional method and the regular conventional method, (iii) to study the effect of the two instructional methods on the second language learning when students were grouped on the four personality traits — creativity, intelligence, motivation and achievement, (iv) to study the effect of three media of presentation — audio, visual and audio-visual — on high and low creatives in the learning of the second language, and (v) to study the achievement levels of the second language, on a comparative basis when three different media were used for presentation to students matched on creativity, intelligence, motivation and achievement.

The study was carried out in sixteen English-medium schools of Delhi and New Delhi. The sample consisted of 788 children of Classes VIII, IX and X screened on the basis of creativity checklist. The first sample of high and low creatives consisted of 434 students and was divided into sixteen groups on the basis of the four variables. A  $3 \times 2 \times 2$  factorial design was used. Each of the groups was exposed to three lessons of programmed instruction and three of the conventional type which were presented by audio, visual and audio-visual media. The tools used were creativity checklist prepared by the investigator for screening, Torrance Tests of Creativity, Standard Progressive Matrices, Aberdeen Academic Motivation Scale and school marks. The eighteen lessons taught were selected by a panel of teachers. Duncan's Range Test, analysis of variance and correlational analysis were applied.

The major findings of the investigation were: (i) Programmed instruction was consistently superior to the regular conventional method in each of the sixteen groups. (ii) The high creatives scored higher on audio presentation while the low creatives scored higher on audio-visual presentation. (iii) The high creatives scored better than the low creatives on comprehension and originality. (iv) The comprehension scores of the high intelligent and high motivated, low creatives and low achievers were higher with the conventional method. (v) The high intelligent group scored better on comprehension. (vi) The interaction effect of the method of presentation and the achievement scores was significant on comprehension but not on originality.

**997. PRASAD, B.,** *A Study of the Impact of Social Reinforcement on Academic Achievement*, Ph.D. Edu., Pat U., 1977

The study aimed at assessing the impact of social reinforcement on academic achievement. The hypotheses formulated were: (i) Those working under the influence of social reinforcement would exhibit significantly higher achievement than those working without it. (ii) The students of the experimental group receiving social reinforcement would tend to exhibit progressive improvement in week-to-week performance from their baseline scores to posttest scores with significant difference.

The sample consisted of 120 students of Class VI divided into two equated groups, the experimental and the control. The two groups were taught by the same teacher, the experimenter, on fixed dates for a period of three months. Weekly tests were administered to the subjects of both the groups. The instructional content, the method of teaching and the nature of the test materials for both the groups were the same but the experimental group received social reinforcement whereas the control group did not. Two-way analysis of variance was applied to the data.

The major findings of the study were: (i) The experimental group scored significantly higher than the control group. (ii) The average marks obtained by the subjects of the two groups on the eight weekly tests and in the posttest showed progressive improvement in week-to-week performance of the experimental group; in the control group there was no progressive improvement. The difference between the pre- and posttest scores of the experimental group was also significant.

**998. PYARI, S.,** *Feeling of Security, Family Attachment and Values of Adolescent Girls in relation to Their Educational Achievement*, Ph.D. Psy., Agra U., 1980

The investigation had the following objectives: (i) to study the relationship between feeling of security-insecurity and educational achievement, (ii) to study the relationship between family attachment and educational achievement, (iii) to study the relationship between feeling of security-insecurity and family attachment, (iv) to study the relationship between different values and educational achievement, (v) to study the relationship between different values and feeling of security-insecurity, and (vi) to study the relationship between different values and family attachment.

In order to attempt a comprehensive study, fifteen hypotheses were verified. Hypotheses 1, 2, 4, 5, 6, 7, 8, and 9 were concerned with the relationship existing bet-

ween the feeling of security-insecurity, family attachment, theoretical value, economic value, aesthetic value, social value, political value and religious value with the educational achievement. Hypotheses 3, 10, 11, 12, 13, 14, 15 were concerned with the relationship existing between the feeling of security-insecurity with educational achievement and theoretical value. The survey method was used on a sample drawn from the city of Agra in the age-group 16 to 21 years. The sample was drawn in accordance with the purposive-non-probability technique. The tools used were Security-Insecurity Inventory (Maslow), The Family Scale (Rundquist and Sletto), Value Test (Ojha) and the aggregate marks obtained in the public examination as a measure of educational achievement.

The study yielded the following findings: (i) The relationship between the security-insecurity scores and the educational achievement scores was negative and significant. (ii) The relationship between the family attachment scores and the educational achievement scores was negative. (iii) The relationship between the security-insecurity scores and the family attachment scores was positive. (iv) As regards the relationship between the achievement scores and different values, the theoretical, aesthetic, social and religious values were positively related to educational achievement while the economic and political values were negatively related with educational achievement. (v) The relationship between the security-insecurity scores and different values was very low. Correlation was found between the different value scores of secure and insecure individuals; the political value scores were negatively related. (vi) The relationship between the family attachment scores and different value scores was insignificant. Religious value and favourable attitude towards family had significant positive relationship. (vii) There was a definite pattern of values among adolescent girls. They gave first preference to social, second to political and thereafter to theoretical, economic, aesthetic and religious values.

**999.** RANI, B., *Self-concept and Other Non-cognitive Factors Affecting the Academic Achievement of the Scheduled Caste Students in Institutions for Higher Technical Education*, Ph.D. Edu., JNU, 1980

The hypotheses of the study were: (i) There was no significant difference in the academic achievement of Scheduled Caste and Scheduled Tribe (SC/ST) students and non-SC/ST students. (ii) There was no significant difference in the background variables of SC/ST and

non-SC/ST students. (iii) There was no significant difference in the non-cognitive aspects of personality, namely, self-concept and reflected self-concept of academic performance, achievement anxiety, perception of purpose in life of SC/ST and non-SC/ST students. (iv) There was no significant relationship between the non-cognitive aspects of personality, viz., self-concept and reflected self-concept of academic performance, achievement anxiety, perception of purpose in life and academic achievement. (v) There was no significant difference in the perception of institutional characteristics between SC/ST and non-SC/ST students. (vi) There was no significant relationship between the perception of the institutional characteristics and academic achievement.

The study was confined to the undergraduate engineering students from five different institutions (IIT, Bombay, DCE, Delhi, MREC, Jaipur, University of Roorkee, MNRC of Engineering, Allahabad) for higher technical education in India. The study was confined to sixty Scheduled Caste students only who served as an experimental sample. No Scheduled Tribe student was available. An equal number of non-SC students who were getting merit-cum-means scholarship were also selected to serve as the control group. The instruments used to collect data were an inventory developed by the investigator to measure the self-concept and reflected self-concept, a revised version of Alpert and Haper's Achievement Anxiety Test, the Purpose-in-Life test developed by Crumbaugh and Maholick, an Environment Assessment Inventory developed by the investigator and a background information sheet to get information about the home background. The grade point averages and marks obtained at the end of the fourth semester were also collected to form the official records of the institutions. The data were analysed by t-test and product moment correlations.

The major findings of the study were: (i) The SC students' academic achievement was significantly lower than that of the non-SC students. Both differed significantly with regard to physical self-concept, self-esteem and self-concept. (ii) Compared to the non-SC students, the SC students had a low self-concept of academic performance, a high reflected social self-concept of mother and peers, and a high reflected self-concept of academic performance of teachers. (iii) There was no difference in the self-concept and reflected self-concept of the SC students except for reflected security self-concept and self-actualization of teachers. (iv) There was no difference in the SC and the non-SC students with respect to the achievement anxiety and perception of purpose in life. (v) As a whole, significant dif-



ference existed between the SC and non-SC students with respect to the non-cognitive aspects of personality. (vi) A significant relationship existed between academic achievement and different aspects of self-concept and reflected self-concept of academic performance as also physical self-concept and reflected physical self-concept of mothers and teachers in the case of the SC students. (vii) The academic achievement of the students was positively related to reflected self-esteem of two other significant factors (teachers and peers) in the educational set-up for the SC students. (viii) No significant relationship existed between academic achievement and achievement anxiety and perception of purpose in life for both the SC and the non-SC students. (ix) Only self-concept and reflected self-concept were related significantly to the students' academic achievement. (x) There was a positive and significant relationship between achievement anxiety and various aspects of self-concept and reflected self-concept for both the SC and the non-SC students. (xi) Students' perception of purpose in life was significantly and positively related to self-concept and reflected self-concept of academic performance for both the SC and the non-SC students. (xii) A positive and significant relationship existed between achievement anxiety and perception of purpose in life in the case of non-SC students only. (xiii) There was significant difference between the SC and the non-SC students with regard to the perception of teachers, peers, administration and facilities provided for extra-curricular activities. (xiv) The SC students' academic achievement was influenced by their perception of institutional characteristics, and the various non-cognitive aspects of personality were significantly related to the students' perception of institutional characteristics. (xv) There was no difference between the SC and the non-SC students with regard to the perception of academic programmes and personal adjustment in the institution.

**\*1000.** RAO, K.S., *Study of the Influence of Continuous Evaluation on Learning in School*, Ph.D. Psy., Del. U., 1982

The study aimed at evaluating the influence of certain reinforcing factors on the learning process in the natural school situation.

Nine tests were administered in science and an equal number in mathematics, which were based on Bloom's taxonomy of educational objectives in order to find out whether continuous evaluation of different cognitive objectives, namely, knowledge, comprehension, application, analysis, synthesis and evaluation were differently

affected by letter grades and teacher comments introduced as reinforcing agents in formative evaluation. The study was spread over one academic year; the tests covered the entire syllabus for Standard V in both the subjects. A control group was taken wherein only routine checking was done. Variables like sex, age, birth order, school, father's education, occupation and income, likes and dislikes for a particular subject and subject teacher and number of children in the family were included. The sample for the experimental and control groups in the natural classroom situation comprised 800 students in science and 641 in mathematics in Standard V of public and Central Schools in South Delhi. The age of the boys and the girls ranged from 9 to 12 years. Thirteen teachers teaching science and mathematics were included. For the laboratory study on the reinforcing effects, twenty-four students were selected from a Central School. Before the achievement tests were administered, Progressive Matrices (Forms A,B,C,D and E) and Torrance Tests of Creative Thinking (Figural Forms A and B) were used to match the control and the experimental groups; the student's opinionnaire and family inventory were also used. The statistical analysis included t-test, F-test and factor analysis.

The findings of the study were: (i) Frequency testing had positive influence on learning under normal school situation. This was true for all variables and all sub-groups as well as the six cognitive objectives. (ii) Children whose fathers belonged to high education and high income groups performed better in science; this was true of one or two children families. (iii) The total gain of the Central School students was more than that of public school students in science and mathematics. (iv) Although there was no difference in letter grades and teacher comments as reinforcements, there was a trend towards better performance in science by those who received several applications of comments; the same was evident for different educational objectives. (v) Gain in science was more than in mathematics; among the six cognitive objectives, gain for application and analysis was appreciable. (vi) Letter grades and teacher comments did not show positive influence on the learning of nonsense syllables in the laboratory study; boys under random reinforcement and girls under alternate reinforcement showed better performance. In general, girls' performance was higher than boys.

**1001.** RAVINDER, *The Effects of State Trait Anxiety, Psychological Stress and Intelligence on Learning and Academic Achievement*, Ph.D. Psy., Pan. U., 1977

The major hypotheses of the study were: (i) Ego-stress instructions would induce differential levels of drive in HA (High Anxiety) and LA (Low Anxiety) students. (ii) At the early learning stage HA would facilitate the performance of HI (High Intelligence) students, while leading to performance decrements in LI (Low Intelligence) students. (iii) Effects of anxiety and intelligence would further depend on experimental conditions of ego-stress and control. (iv) LA state would have facilitative effects on the performance of both HI and LI groups at all the stages of learning. (v) Anxiety and intelligence would have differential effects on the achievement of students in aggregate and in different school subjects.

The study was divided into two phases. Phase I included two laboratory learning tasks, namely, serial verbal learning and paired-associate learning. Phase II included academic achievement in aggregate and five different school subjects. The sample of the study consisted of 240 girl students of Grade IX selected from a preliminary sample of 1,149 subjects. The tools used for collecting data were Hindi version of State Trait Anxiety Inventory (STAI) of Spielberger (Sharma and Singh) Hundal's General Mental Ability Test, Hindi version, lists of serial verbal learning task and paired associate learning task prepared by the investigator. The marks obtained in the annual examination in aggregate and various school subjects were used to indicate academic achievement. Statistical techniques of analysis of variance and factor analysis were employed for analysing the data.

The major findings of the study were: (i) The performance of HA and LA students reflected differences in drive level only where experimental conditions contained some degree of stress. (ii) Overall, under the experimental conditions of ego-stress, the performance of HI-LA students was superior at all the stage of learning, whereas it was most detrimentally affected in the case of LI subjects. (iii) The performance of HI-HA students, under control conditions, was better than their HI-LA counterparts and LI-HA students were better than LI-LA. (iv) For HI students, the drive level or experimental conditions were as important as they were for LI students. (v) The performance varied as an inverted U-function of physiological activation (drive). (vi) LA students performed significantly better than HA ones at all the stages of learning. (vii) Ego-stress and anxiety state effects were similar. (viii) Anxiety, as a main effect, was not significantly related to academic achievement, except in the case of achievement in general science and mathematics. (ix) High aptitude students tended to per-

form better than low aptitude students irrespective of the anxiety level. (x) School courses demanding higher cognitive skills produced many error tendencies in HA students even at HI level. (xi) The abruptly introduced stress in an experimental situation was more detrimental than the examination stress accumulated gradually over a period of time. (xii) General anxiety by itself had relatively little effect on academic achievement and the combination of anxiety with intelligence considerably increased the accuracy of predicting academic performance.

**1002.** REDDY, C.A., *Interrelationship between Organizational Climate of Secondary Schools, Socio-economic Status of Students, Students' Perception of Rewarding Behaviour and Their Academic Achievement*, Ph.D. Edu., Osm. U., 1981

The investigation was carried out with the objective of finding out the relationship between (i) the organizational climate of schools and the academic achievement of schools and academic achievement of students, (ii) the type of management and the academic achievement of the students of the concerned schools, (iii) the socio-economic status of students and their academic achievement, (iv) the organizational climate of schools and students' perception of rewarding behaviour, (v) the socio-economic status of students and their perception of rewarding behaviour, and (vi) students' perception of rewarding behaviour and their academic achievement.

One thousand and eighty teachers and 1,607 students were selected using stratified random technique from 103 schools of Telangana area. The tools used to measure various correlates were organizational Climate Description Questionnaire by Halpin and Croft, personal data blank, Socio-Economic Status Scale (Urban) adapted from Kuppuswamy Socio-Economic Status Scale adapted from Pareek and Trivedi and Students' Perception of Rewarding Behaviour adapted from Reddy. Correlational matrices, F-ratio and chi-square test were employed to analyse the data.

The major findings of the investigation were: (i) The organizational climate profile of the government schools in Telangana area was controlled. The academic achievement level of the students was 305.34 out of 600 marks. (ii) The organizational climate profile of the zil-laparishad schools was controlled-cum-paternal-cum-closed. The academic achievement level of the students was 303.47 out of 600 marks. (iii) The organizational climate of the schools under aided management was con-

trolled-cum-autonomous. The academic achievement level of the students was 325.73 marks out of 600. (iv) The organizational climate profile of the schools under unaided management was controlled-cum-open. The level of academic achievement of the students was 364.54 marks out of 600. (v) The organizational climate of the schools under different managements had different profiles and the students' perception of rewarding behaviour was neutral in all the cases. (vi) There was positive correlation between the socio-economic status of the students and their academic achievement. (vii) The students' perception of rewarding behaviour was consistently neutral.

**1003.** REDDY, I.V.R., *Academic Adjustment in relation to Scholastic Achievement of Secondary School Pupils — a Longitudinal Study*, Ph.D. Psy., SVU, 1978

The objective of the investigation was to carry out a longitudinal study of the relation of academic adjustment to scholastic performance of secondary school pupils at the terminal stage of their education.

The sample comprised 250 students of Class VIII from rural, semi-urban and urban areas selected randomly and followed till they reached Class X. The tools used were an adapted form of Rao's Academic Adjustment Inventory, a sentence completion device to assess the attitude to self, learning, achievement, parents, teachers and peers, Raven's Standard Progressive Matrices, Rao's Socio-Economic Status Scale and personal data sheets. The data were analysed using analysis of variance, t-test, chi-square test and correlation techniques. Repeated measurement design was used.

The major findings of the investigation were: (i) Academic adjustment was significantly related to scholastic performance. (ii) Mental ability and scholastic performance were moderately related. (iii) Beyond the necessary minimum level of ability, any increment in mental ability was not directly related to the increase in academic adjustment level. (iv) The attitudes to self, learning, achievement, parents, teachers and peers were positively related to academic adjustment and scholastic performance. (v) The order of birth and the size of the family were not related to academic adjustment nor to scholastic performance. (vi) The socio-economic status of the pupils' parents was not significantly related to scholastic performance at Class VIII and Class IX but at Class X the pupils hailing from homes with higher socio-economic status performed better. (vii) Academic ad-

justment was independent of socio-economic status; scholastic performance and consistency in vocational preference were unrelated.

**\*1004.** ROY, P and DIGHE, A., *Factors Affecting Comprehension and Retention of Selected SITE Programmes*, Council For Social Development, New Delhi, 1977 (ICSSR-financed)

The objectives of the study were: (i) to find out the socio-economic background of regular viewers of television, (ii) to determine whether urban and other media contact would affect TV exposure, (iii) to find out whether there were any gains in the comprehension and retention scores in four selected villages, (iv) to determine the background variables that would affect comprehension and retention, and (v) to assess the extent to which interest, utility, attitude and relevance would affect comprehension.

Hyderabad was selected as the site for study for logistical reasons. The emphasis was on hardcore programmes which had never been telecast before—two agricultural programmes, one in the area of health and nutrition and the other in the area of family planning. Those villages which had already been selected for other SITE studies and were within 10 kilometres were selected.

The study revealed: (i) A typical viewer was a literate male in the age group 15-25 years, belonged to the upper caste and was a big farmer. (ii) There were significant gains in the comprehension scores across various categories of respondents. (iii) With regard to interest, utility, attitude and relevance, the comprehension and retention scores showed consistent differences between the groups, which implied that the Indian village TV audience was perceptual.

**1005.** SALUNKE, R.B., *A Study of the Home Environment, Socio-economic Status and Economic Management in relation to the Academic Achievement of the First Year College Students of M.S. University, Baroda*, Ph.D. Edu., MSU, Baroda, 1979

The main objectives of the investigation were: (i) to study home environment, educational climate in the home, emotional climate in the home, socio-economic status, economic management, and academic achievement of the first year college students of the M.S. University, Baroda, (ii) to find out the relationship of home environment, socio-economic status and economic man-



agement with academic achievement, and (iii) to find out the differences in home environment, socio-economic status and economic management of students of different faculties, sex and age.

The sample for the study consisted of 693 students of the first year from four faculties of the M.S. University of Baroda, viz., science, commerce, arts and home science. Data were collected by personally administering the questionnaire to the students. The questionnaire was in three sections — Section I was the socio-economic status scale which was a modified version of the original Kuppuswamy SES scale, Sections II and III were home environment questionnaire and economic management questionnaire, respectively, developed by the investigator. Data regarding academic achievement were obtained from the official records. Data were analysed employing the statistical techniques such as mean, standard deviation, t-test and coefficient of correlation.

The major findings of the study were: (i) The academic achievement of the students was related to their home environment. (ii) Educational climate and emotional climate were related with academic achievement. (iii) Educational facilities and emotional happiness in the home contributed positively to the academic achievement of the students. (iv) Socio-economic status was not related with academic achievement whereas economic management was related with academic achievement. (v) The socio-economic status, home environment and economic management of the students of different faculties differed. (vi) The students of home science and science faculties belonged to higher socio-economic status and the students of home science faculty were better in economic management. (vii) The male and the female students differed so far as their home environment was concerned but they did not differ with regard to their socio-economic status and economic management. (viii) Home environment and economic management had no relationship with different age groups whereas socio-economic status had relationship with age groups.

**1006.** SATYANANDAM, B.D., *A Study of Socio-economic Status and Academic Achievement*, Government College of Education, Kurnool, 1969

The study aimed to find out (i) whether there was significant difference in the academic achievements of children belonging to various economic and educational backgrounds, (ii) whether low economic background

caused any setback in the learning process of the subject, (iii) whether sex had any bearing on the learning process, and (iv) whether the educational level of parents had any influence upon the achievement levels of pupils. The hypotheses formulated were: (i) There was no relationship between the educational level of employed parents and the academic achievement of their children studying at the higher secondary stage. (ii) There was no significant relationship between the economic status of employed parents and the achievement level of their children studying at the higher secondary stage.

The sample consisted of students belonging to the English-medium sections of Classes XI and XII of the Government Model Higher Secondary School, B-Camp, Kurnool, Andhra Pradesh. The students selected were from urban areas. The academic achievement scores of the subjects were collected from the central marks register of the school. The educational and economic backgrounds of the subjects were gathered with the help of a data sheet specifically prepared by the investigator.

The study yielded the following findings: (i) The children of graduate parents performed far better than the children of matriculate parents. (ii) The children of upper economic strata and lower economic strata differed very significantly. (iii) The upper and the middle economic groups differed significantly. (iv) The middle and the lower economic groups did not differ significantly. However, the middle economic group was better than the lower economic group. (v) Sex had no bearing upon the achievement level.

**1007.** SAUN, G.S., *Patterns of Self-disclosure and Adjustment among High and Low Achievers*, Ph.D. Psy., Kum. U., 1980

The investigation attempted (i) to trace the self-disclosure of male and female high and low achievers separately, (ii) to find out the self-disclosure of urban as well as rural high and low achievers, (iii) to know the self-disclosure of high achievers of high school and intermediate classes for male and female students separately, (iv) to study the self disclosure of high and low achievers in different areas of self, (v) to understand the adjustment pattern of male and female high and low achievers, (vi) to find out the adjustment pattern of urban as well as rural high and low achievers, (vii) to know the self-disclosure of highly adjusted and low adjusted male and female adolescents, and (viii) to identify the area-wise pattern of adjustment between high and low achievers.

With the help of multi-stage sampling, 400 male and

female adolescents of high schools and intermediate colleges of Kumaun region, in the age range 14 to 19 years, were randomly selected. Self-Disclosure Inventory (SDI) and Adjustment Inventory (AI) were administered to the subjects and the data were analysed using quartile deviation, critical ratio and Kolmogorov-Smirnov extension of median test.

The main findings of the investigation were: (i) The male high and low achievers equally disclosed their self to others in all the eight dimensions of SDI — money, personality, study, body, interests, feelings—ideas, vocation and sex. (ii) There was significant difference in self-disclosure in relation to five areas — money, body, interests, feelings — ideas and sex — among the female high and low achievers. (iii) There was significant difference in self-disclosure of the female high and low achievers towards their friends and teachers. (iv) In the urban high and low achievers, there was significant difference in their mean self-disclosure scores so far as personality, body and sex were concerned. (v) Towards friends, the urban high achievers disclosed more than their low-achieving counterparts. (vi) The rural low achievers disclosed themselves more significantly so far as sex was concerned. In the remaining seven areas both the groups had disclosed equally. (vii) No significant difference was revealed in the level of self-disclosure of the rural high and low achievers. (viii) The high school and intermediate level high achievers differed in their level of self-disclosure in relation to money, study, interest and feeling ideas. (ix) In the case of the male students, towards brother, sister and friend, intermediate high achievers disclosed more significantly than high school high achievers. (x) The female high school and intermediate high achievers were equally communicative in all the eight areas of self. (xi) Among the female high school and intermediate high achievers, there was more or less equal communicativeness towards all six target persons. (xii) The male high achievers were more adjusted than the low achievers in the areas of home and health. (xiii) Significant difference existed between the high and the low-achieving females in health, social, emotional and educational areas of adjustment. (xiv) The urban low achievers were emotionally more adjusted than the high achievers but they were equally adjusted in the remaining four areas of AI. (xv) The rural high and low achievers differed significantly in their level of adjustment in three areas, namely, home, social and educational. (xvi) Self-disclosure pattern of the high and the low adjusted male adolescents was significantly different in three areas, namely, money, study and interest. (xvii) The male high and low adjusted adolescents had dis-

closed differently towards mother, brother, sister, friend and teacher. (xviii) The female high and low achievers were more or less equally communicative except in the area of study. (xix) The high and the low adjusted adolescents had disclosed equally to all target persons. (xx) High-and low-achieving adolescents had shown different adjustment pattern in home, social and emotional areas.

**1008.** SHAH, J.H., *Relationship of Self-concept to Academic Achievement of Secondary School Pupils*, Dept. of Edu., Sau. U., 1978 (Sau. U. financed)

The major objectives of the study were: (i) to find out the relationship between self-concept and academic achievement, (ii) to find out whether girls as a group indicated higher positive self-concept, and (iii) to see whether there was any significant difference in the self-concept of pupils of Grades IX and X.

The sample consisted of 764 pupils of Grades IX and X drawn from ten secondary schools of Bhavnagar. Some pupils dropped out in the middle and the final sample included 718 pupils of whom 368 were boys and 350 girls. One hundred and eighty-eight boys and 160 girls were drawn from Grade IX and the remaining from Grade X. A self-concept inventory newly developed by the author and based on the self-reporting technique was the tool used for data collection. The aggregate marks scored in academic subjects at the annual examination converted into T-scores were used as the measure of academic achievement. The t-test was used to test the significance of differences in academic achievement scores.

The major conclusions of the study were: (i) There was no significant sex difference in self-concept at Grade IX while the same at Grade X was significant. The girls as a group did not indicate higher positive self-concept. (ii) There was no significant difference between the mean scores on the self-concept of pupils studying in Grades IX and X. (iii) The relationship between self-concept and academic achievement was significantly positive and linear.

**\*1009.** SHARMA, R.R., *Self-concept, Level of Aspiration and Mental Health as Factors in Academic Achievement*, Ph.D. Psy., BHU, 1979

The main objectives of the study were: (i) to find out differences in scholastic achievement between the stu-

dents having a high level of self-concept, goal discrepancy and better mental health with the students having low scores on these three variables, (ii) to find out differences on various measures of self-concept between the high and the low scoring groups on goal discrepancy, mental health and academic achievement, (iii) to find out differences in the levels of aspiration between the high scoring and the low scoring groups on the measures of self-concept, mental health and academic achievement, (iv) to find out whether mental health was significantly related to self-concept, the level of aspiration and academic achievement, and (v) to find out sex differences in the levels of aspiration, self-concept and mental health at various age levels.

Fifteen hypotheses were framed for conducting the investigation. A sample of 1,060 students was randomly drawn from students studying in Classes X to XII of high schools, and intermediate colleges situated in eight eastern districts of Uttar Pradesh. The tools used were Piers-Harris Children's Self-Concept Scale (Hindi adaptation), Ansari and Ansari's LA Coding Test, Asthana's Adjustment Inventory and personal data schedule. The marks obtained at the previous annual examination were used as an index of academic achievement. Coefficient of correlation, t-test, chi-square test, and cluster analysis were employed for analysing the data.

The main findings of the study were: (i) The level of self-concept affected academic achievement positively and significantly. (ii) The level of aspiration did not influence academic achievement. (iii) Mental health (as measured by the adjustment inventory) did not affect scholastic achievement, but influenced certain measures of self-concept. (iv) Differences in academic achievement influenced the level of aspiration. (v) Differences in academic achievement did not influence mental health. (vi) The level of aspiration (GD scores) was significantly related to intellectual attributes and elements of self-concept. (vii) Mental health was positively and significantly related to self-concept. (viii) The level of self-concept did not influence the level of aspiration. (ix) Differences in mental health did not influence the level of aspiration. (x) Differences in self-concept affected mental health. (xi) The level of aspiration had favourable influence on mental health. (xii) There was a strong tendency in girls to set their level of aspiration below their achievement whereas boys showed an opposite trend. (xiii) Boys and girls differed significantly on their adjustment scores. Girls were significantly superior to boys at the age of 13 whereas in late adolescence from 16+ to 18+ boys showed significantly better adjustment. (xiv) There was no significant sex difference in the level

of aspiration among the age group under study. (xv) Boys scored higher than girls on all the elements of self-concept at the age of 18+. (xvi) The level of aspiration was not significantly related with family income, birth order and vocational aspiration.

**\*1010.** SHARMA, S., *A Study of Intellectual Factors and Academic Achievement in Arts, Science and Commerce Courses at Higher Secondary Stage*, Ph.D. Edu., AMU, 1982

The objective of the investigation was to study the predictive value of intelligence (verbal and non-verbal) and creativity for success in arts, science and commerce courses at the higher secondary stage, with anxiety, study habits and socio-economic status as control variables.

The sample of the study comprised 750 male students studying in Class XI of nine intermediate colleges in Western Uttar Pradesh. Analysis of covariance was employed to eliminate the effects of intervening variables.

The main findings of the study were: (i) The students of the scientific stream possessed a higher level of verbal intelligence than those of the literary and commercial streams. (ii) The students of the scientific and commercial streams possessed a higher level non-verbal intelligence and creativity than those of the literary stream. There was no significant difference between the students of the scientific and commercial streams on these variables. (iii) The high achievers of only the scientific stream were significantly better than the low achievers on both verbal and non-verbal intelligence. (iv) The high achievers of only the commercial stream were significantly better than the low achievers of this stream on creativity. (v) The high achievers of only the scientific stream were superior to those of the literary and commercial streams, but the low achievers of both the scientific and commercial streams were better than those of the literary stream on verbal intelligence. (vi) The high as well as the low achievers of both the scientific and commercial streams were superior to those of the literary stream on creativity, but the low achievers of the literary and scientific streams were superior to those of the commercial stream.

**1011.** SHASHIDHAR, B., *A Study of the Relationship between a Few School Variables and the Achievement of Scheduled Caste Students Studying in Sec-*



*ondary Schools of Karnataka*, Ph.D. Edu., Ban. U., 1981

The objectives of the investigation were: (i) to study the nature of relationship that existed between organizational climate and the achievement of the Scheduled Caste (SC) students, (ii) to explore the influence of teachers' attitude towards the Scheduled Caste students, (iii) to determine the extent to which the Scheduled Caste students' adjustment in the school influenced their achievement, (iv) to find out the influence of sociometric status of the Scheduled Caste students on their achievement, (v) to examine the relationship between intelligence and achievement, and to partial out the effect of intelligence on the bivariate relationships of other variables with achievement, and (vi) to examine the relationship between the students' perception of teachers' expectation and the achievement of the Scheduled Caste students.

From among the high schools of Bangalore district, thirty-four schools formed the sample at the school stage. All the available SC students in these schools, viz., 485 SC boys and 193 SC girls in Standard VIII, 355 SC boys and 110 SC girls in Standard IX, and 221 SC boys and 50 SC girls in Standard X formed the sample. Halpin and Crofts' Organizational Climate Description Questionnaire (OCDQ), Sociometric Questionnaire (Sharma), Non-verbal Group Test of Intelligence (Nair), an attitude scale to measure teachers' attitude towards the Scheduled Castes, an adjustment inventory to measure the SC students' adjustment in the school, an adjective checklist to measure the students' perception of teachers' expectation and standardized achievement tests in science and mathematics were used to collect data. Coefficients of correlation, test of homogeneity, Behrens-Fisher test and t-test were used in the analysis of the data.

The major findings of the investigation were: (i) The SC students of Standard VIII were not susceptible to the effects of the eight dimensions of OCDQ. In the case of Standard IX the climate dimensions which are the descriptions of teacher behaviour as a group seemed to be important in terms of achievement of the SC boys. The SC students of Standard X were susceptible to the effects of disengagement and intimacy dimensions of the climate. Disengagement hindered their achievement and intimacy enhanced their achievement. (ii) Openness of the school was significantly related to the achievement of the SC students of Standards IX and X. (iii) In all the three standards the sociometric status was not significantly related to the achievement of the SC girls, but it

was positively and significantly related to the achievement of the SC boys of Standard IX. (iv) Intelligence was related to the achievement of the SC students in all the three standards. The relationship between intelligence and achievement was affected by the association of variables like sociometric status, students' adjustment in the school and students' perception of teachers' expectation. (v) An inverse relationship between the scores on the adjustment inventory (higher scores indicating maladjustment) and achievement was observed in the case of the SC students in Standards VIII and X, but in Standard IX no significant relationship was observed. (vi) The students' perception of teachers' expectation was positively related to achievement in Standard VIII and IX, but in Standard X there was no significant relationship.

**1012.** SHASHILATA, *Prediction of Academic Achievement*, Ph.D. Psy., Mee. U., 1977

The objectives of the study were: (i) to determine the structure of intellectual predictors of success in B.A., B.Sc., B.Com. university examinations, (ii) to determine the non-intellectual predictors of success in B.A., B.Sc., B.Com. university examinations, and (iii) to establish prediction equations for success in B.Sc., B.A., B.Com. examinations.

The hypotheses formulated were: (i) Intellectual factors related to success in arts, science and commerce were different. (ii) Academic adjustment of those succeeding in any of the stream (science, arts, commerce) was not different. (iii) Patterns of non-intellectual factors of those succeeding in arts, science and commerce were different. (iv) The mean scores of first divisioners on meaningful predictors would be significantly higher than those of third divisioners/failed students. The investigation was conducted on the entrants of 1973-74 in the three degree colleges located in Dehradun. The study used Guilford's Structure of Intellect Factors, as the measure of intellectual variables Neyman-Kohlstedt Diagnostic Test for Introversion-Extroversion (IE), Edward Personal Preference Schedule (EPPS) to measure personality factors, and Narayan Rao's Indirect Academic Adjustment Inventory (IAAI) to measure non-intellectual variables.

The findings of the study were: (i) The intellectual predictors for the science stream were, in order of importance, associational fluency (Fa), spatial scanning (Ss), word fluency (Fw), sensitivity to problems (Sep), originality (O), and ideational fluency (Fi). (ii) The in-

tellective predictors for success in the arts stream were, in order of importance, expressional fluency (Fe), semantic spontaneous flexibility (Xs), figural adaptive flexibility (Xa), induction (I), ideational fluency (fi) and spatial scanning (Ss). (iii) The intellectual predictors for success in the commerce stream were, in order of importance, figural adaptive flexibility (Xa), expressional fluency (Fe), spatial scanning (Ss), number facility (N), ideational fluency (Fi) and sensitivity to problem (Sep). (iv) Two intellectual factors were common to all the three streams — ideational fluency (Fi) and spatial scanning (Ss). (v) There were factors which were required exclusively for a particular stream — for the science stream associational fluency (Fa), word fluency (Fw) and originality (O); for the arts stream semantic spontaneous flexibility (Xs) and induction (I); for the commerce stream number facility (N). (vi) The intellectual predictor profile for the three streams was distinct and unique. (vii) The non-intellectual factor of adjustment to academic environment was a common predictor for all the streams. (viii) The non-intellectual personality needs were different for each stream. (ix) The six intellectual factors and IAAI together accounted for a satisfactory proportion of the criterion variance.

**1013.** SHIVAPPA, D., *Factors Affecting the Academic Achievement of High School Pupils*, Ph.D. Edu., Kar. U., 1980

The main objectives of the study were: (i) to investigate the relationships between the predictor variables such as self-concept (SC), study habits (SH), personality adjustment (PA), educational aspiration (EA), manifest anxiety (MA), socio-economic status (SES), need achievement (n-Ach) and intelligence (IQ) of high school pupils of Standard X and their academic achievement (AA), and (ii) to determine the relative efficacy of the predictor variables (SC, SH, PA, EA, MA, SES, n-Ach and IQ) in predicting AA of high school pupils of Standard X.

The study was confined to 900 high school pupils studying in Standard X of twenty-seven selected high schools of north Bangalore, south and rural districts. The stratified random sampling procedure was followed in the selection of 900 pupils (510 boys and 390 girls) from urban and rural schools. The tools employed for the study were Q sort test for measurement of self-concept, Study Habits Inventory, Mysore Personality Inventory, Educational and Vocational Aspiration Scales, Manifest Anxiety Scales, Socio-Economic Status Scale (adapted

version), TAT to measure need achievement and non-verbal test of intelligence. Product moment coefficient of correlation and regression analysis were used to analyse the data.

The important findings of the study were: (i) Study habits, educational aspiration, socio-economic status, n-Ach and IQ were significant positive correlates whereas personality adjustment and manifest anxiety were significant negative correlates. (ii) The factors that contributed to predicting academic achievement were IQ, n-Ach, MA, EA and SH; intelligence made the maximum contribution and n-Ach the next. (iii) With reference to the urban high school pupils, SH, EA, SES, n-Ach and IQ were significant positive correlates and PA and MA were significant negative correlates. (iv) When intelligence, n-Ach, MA, EA, and PA were considered together for predicting the academic achievement of the urban high school pupils, the two variables IQ and n-Ach made more or less equal contribution. (v) In the case of the rural high school pupils, SH, EA, n-Ach and IQ were significant positive correlates. When the potency of IQ, EA and n-Ach was considered together in predicting the AA of the rural high school pupils, IQ made the greatest contribution, followed by EA. (vi) For the success of high school boys at the Standard X examination, SH, EA, SES, n-Ach and IQ turned out to be significant positive correlates and MA significant negative correlate. The potency of IQ, n-Ach, MA and EA taken together in the prediction of the AA of the Standard X boys was evident while IQ made the greatest contribution, followed by n-Ach. (vii) For the success of high school girls of the Standard X examination, SH, EA, n-Ach, and IQ turned out to be significant positive correlates and PA and MA as significant negative correlates; the potency of IQ, PA, n-Ach and SH taken together in the prediction of the AA of the Standard X girls was revealed while IQ made the maximum contribution, followed by PA.

**\*1014.** SIDDIQUI, B.B., *Effects of Achievement Motivation and Personality on Academic Success*, Ph.D. Psy., Guj. U., 1979

The objectives of the investigation were: (i) to study the relationship between intelligence, personality and achievement, (ii) to study the difference with respect to personality, n-achievement and motivation among rural, urban and overseas students, (iii) to study the relationship between personality and n-achievement, and (iv) to study the relationship between family

background factors and academic achievement of students when intelligence was kept constant.

The sample consisted of 450 students drawn randomly from various colleges in the city of Ahmedabad. Data were collected using Thematic Apperception Test, Mukerji's Forced-choice Test of Achievement Motivation, college examination marks of students, Eysenck's Personality Inventory, and Progressive Matrices Test. The data were analysed by recourse to frequency distribution, F-test and chi-square test.

The major findings of the investigation were: (i) There was a mutual relationship between intelligence, achievement and personality. (ii) Personality and achievement motivation differed in the rural, urban and overseas students. (iii) Personality had positive correlation with achievement motivation. (iv) Family background factors had positive relationship with the academic achievement of the students when the intelligence factor was held constant.

**\*1015.** SINGH, K., *A Study of Creative Thinking of High School Students of Himachal Pradesh in relation to Some Cognitive and Non-cognitive Variables*, Ph.D. Edu., HPU, 1982

The objectives of the study were: (i) to construct and standardize verbal and non-verbal tests to measure the verbal and non-verbal factors involved in the process of creative thinking for high school students, in the age group of 12 to 17 years, of Himachal Pradesh, (ii) to study the nature of distributions of the verbal and non-verbal creative thinking scores of the high school students and their relationship with sex, (iii) to study the relationship of the verbal, non-verbal and total creative thinking scores, separately for boys and girls, with the cognitive variables, namely, verbal intelligence, non-verbal intelligence and academic achievement, and the non-cognitive variables, namely, age, introversion-extroversion, neuroticism-emotional stability, test anxiety, achievement motivation and socio-economic status, and (iv) to study the personality dynamics of the extreme cases on the scale of creative thinking by conducting intensive case studies.

To start with, seven verbal and seven non-verbal test activities were selected to find out their suitability in the local conditions of the hilly state of Himachal Pradesh, having its own unique socio-cultural background, and were administered to a sample of 175 students studying in Grades VIII, IX and X drawn randomly from nine high and higher secondary schools situated in five dis-

tricts. On the basis of responses elicited from the students, four verbal and four non-verbal test activities were chosen for further development. A representative sample of 370 students (boys and girls) from Grades VIII, IX and X of thirteen high and higher secondary schools situated in seven districts of the State was drawn for the administration of the preliminary draft. On the basis of item analysis, discrimination index was computed for each item on each of the dimensional scores. Reliability and validity of the tests were established on an independent sample of 110 students studying in Grades VIII, IX and X randomly selected from six high and higher secondary schools situated in three districts of the State. The sample for correlational study consisted of 1,000 Grade X students, 500 boys and 500 girls, studying in thirty-two high and higher secondary schools situated in nine districts of the State. The tools used for data collection were Jalota's General Mental Ability Test, Raven's Standard Progressive Matrices, Eysenck's Maudsley Personality Inventory, Sarason's Test Anxiety Scale for Children, McClelland's Test of Achievement Motivation and Socio-Economic Status Scale Questionnaire (SESSQ urban) by Jalota, Pandey, Kapoor and Singh. Step-wise multiple regression analysis was carried out for boys and girls, separately.

The main findings of the study were: (i) The verbal and non-verbal creative thinking scores of the high school students of Himachal Pradesh were normally distributed. (ii) The high school boys achieved significantly higher mean scores than the high schools girls on the measures of verbal and non-verbal creative thinking. (iii) The verbal, non-verbal and total creative thinking scores were positively and significantly related with the verbal and non-verbal intelligence of the high school boys and girls. Further, there was curvilinear relationship between the measures of creative thinking and intelligence, which was suggestive of the threshold concept of IQ. (iv) The verbal, non-verbal and total creative thinking variables had positive and significant relationship with the academic achievement of the high school boys and girls. (v) Age was negatively and significantly related with verbal, non-verbal and total creative thinking. (vi) The introversion-extroversion and neuroticism-emotional stability scales had, negative relationship with verbal and non-verbal creative thinking. (vii) Test anxiety was negatively and significantly related with verbal, non-verbal and total creative thinking. (viii) Achievement motivation had positive and significant relationship with verbal, non-verbal and total creative thinking. (ix) Socio-economic status was positively and significantly related with the verbal, non-verbal and total crea-



tive thinking of the high school students. (x) The high creative high school boys and girls were differed from the low creative high school boys and girls on certain personality characteristics as measured by the Rorschach Psycho-Diagnostic Test. (xi) The high creative students were quicker in responding to the blots and also showed greater productivity of thought. They had more organizational ability of viewing the experience as an integrated whole and had rich human experience, rich inner life and greater creative potential. (xii) The high creative students were also well adjusted intellectually, and emotionally and more mature than the low creative ones. Further, they were stubborn and had less tensions, anxieties and adjustment problems than the low creatives. (xiii) The high creative students also had a wider range of interests and realistically higher level of aspiration than the low creative students.

- 1016.** SINGH, L.M. and VENKATACHALAM, R., *Socio-economic Environment and Performance under Trimester System*, Dept. of Soc., Madras U., P.G. Centre, Coimbatore, 1976

The investigation aimed at evaluating the performance of students from different socio-economic environmental status groups under the traditional system and the trimester system.

The sample comprised 122 students of Tamil Nadu Agricultural University admitted to the B.Sc. degree course during 1972-73. The tool for data collection was an eleven-point scale to grade the socio-economic environmental status of the students. Factors of caste, occupation of parents, annual income of the family, educational status of the parents were the components of the scale. The traditional system was represented by the combined performance of the students at the S.S.C. public examination and the pre-university examination. The combined performance of the students in the trimesters represented the trimester system. Chi-square test was used for data analysis.

The major findings of the investigation were: (i) Students coming from unfavourable and most unfavourable socio-economic environmental groups were able to perform better under the trimester system than under the traditional system. (ii) The trimester system with built-in supervision and continuous evaluation compensated for some of the socio-economic environmental handicaps faced by the students coming from unfavourable socio-economic environmental status groups.

- 1017.** SOMAN, K., *Some Affective Correlates of Mathematics Achievement of Secondary School Students*, Ph.D. Edu., Ker. U., 1977

The study aimed at investigating the overlap of certain affective variables (adjustment variables) with cognitive outcomes in mathematics achievement. The major hypothesis of the study was that within an unselected group of secondary school students, there would be significant relation between mathematics achievement (cognitive domain) and each of the affective variables selected.

The study was designed with fourteen affective variables (belonging to one basic personality dimension—adjustment) treated as independent variables and mathematics achievement in the cognitive domain as the dependent variable. The study was conducted on a representative sample of 628 students attending Standard IX in secondary schools selected from three representative geographic areas of Kerala. The proportionate stratified sampling technique with adequate representation given to categories like school efficiency, sex and rural-urban residence was used in obtaining the sample. Product moment coefficient of correlation, tests of significance for difference between the means of large independent samples, and factor analysis were the major statistical techniques used in this study.

The major findings of the study were: (i) All the selected fourteen variables were not significantly correlated with mathematics achievement. (ii) Personal adjustment variables and anxiety variables had considerable influence on mathematics achievement, with probably small exceptions for certain sub-samples. (iii) In the case of boys, eleven variables correlated significantly with mathematics achievement whereas for girls only four variables showed significant correlations. (iv) The patterns of correlations obtained for boys and girls showed some remarkable differences. (v) The correlations obtained for girls indicated certain patterns which were dissimilar to those of boys. (vi) The correlation for the rural group and the urban group also showed some variation in their patterning. For the rural group, ten affective variables significantly correlated with mathematics achievement. As against this, for the urban group only six variables correlated significantly with mathematics. (vii) More affective variables were seen to possess the ability to discriminate between the extreme achievement pairs (high, with low achievers) as against the more approximate pairs. (viii) The dominant personality factor for the over-achievers was individual adjustment.

- 1018.** SOMASUNDARAN, M., *A Comparative Study of Certain Personality Variables related to Over-Normal and Under-achievement in Secondary School Mathematics*, Ph.D. Edu., Calicut U., 1980

The aim of the study was to identify certain important variables related to achievement in mathematics in general and discrepant achievement in particular among the secondary school pupils in Kerala. Achievement in mathematics was the dependent variable and sixteen personality variables of the adjustment-temperamental dimensions were the independent variables.

The sample consisted of 123 over-achievers, 601 normal achievers and 106 under-achievers. An achievement test in mathematics constructed for the purpose, the personality scales standardized at the Kerala University, Department of Education, Raven's Progressive Matrices and a general data sheet served as tools. Product moment coefficient of correlation and t-test were used in the analysis of the data.

The major findings of the study were: (i) The personality variables, namely, social standards, introversion, family relations, social skills, self-reliance, antisocial tendencies (freedom from), school relations, nervous symptoms (freedom from), and community relations, had significant positive relationship with achievement in mathematics while the variables of general anxiety, test anxiety and masculinity had negative relationship. (ii) While the variables of the sense of personal worth, sense of personal freedom and feeling of belonging did not correlate with discrepant achievement levels in mathematics, all the other twelve variables had significant relationship with the same. (iii) All variables except the sense of personal worth, sense of personal freedom, withdrawing tendencies, community relations and test anxiety discriminated between the unselected groups of over- and normal achievers. However, when the groups of over-achievers and normal achievers were equated on the basis of sex, age, place of residence, school category and parental education, occupation and income, no significant difference between the mean scores of these groups could be noted with respect to any of the personality variables. (iv) Personality variables of social standards, introversion, family relations, social skills, test anxiety, general anxiety, school relations, self-reliance, masculinity, antisocial tendencies (freedom from) and nervous symptoms (freedom from) discriminated between the unselected groups of over-achievers and under-achievers. (v) The variables which discriminated between the unselected groups of normal and under-

achievers were social standards, introversion and family relations. In the case of the equated groups the variables of sense of personal worth, introversion and social standards showed significant discrimination between the normal and the under-achievers. (vi) All personality variables except the sense of personal worth, sense of personal freedom, withdrawing tendencies (freedom from) and community relations discriminated between over-achievers and non-over-achievers. (vii) The variables of social skills, nervous symptoms (freedom from) and masculinity showed significant discrimination between normal achievers and non-normal achievers. (viii) The variables of social standards, introversion, family relations, test anxiety and community relations discriminated between under-achievers and non-under-achievers.

- 1019.** SRINIVASA RAO, R. and SUBRAHMANYAM, S., *An Intensive Study of Certain Factors Influencing the Reading Attainment of Primary School Children*, Dept. of Edu., SVU, 1982 (NCERT-financed)

The objectives of the study were: (i) to examine the association of various home factors, school factors and personal characteristics of children with their reading attainment, (ii) to estimate the relative influence of these factors on the reading attainment of children, and (iii) to suggest remedial measures to improve the reading skills of poor readers.

The sample for the study consisted of 600 students studying in sixty schools of different areas of Andhra Pradesh selected by the stratified random sampling procedure. Due representation was given to sex, location and management of the schools. Variables included were: type of house and accommodation, availability of reading material in the house, educational level of parents, occupation of the parent, income of the family, physical facilities of the school like accommodation, strength of the class (teacher-pupil ratio), qualifications of teachers, experience of teachers, availability of instructional material in the school, availability of books and library facilities, general mental ability of the child, ability of visual discrimination of words, ability of auditory discrimination of sounds, clarity of speech, reading habits and interest of the child in reading. Reading tests in Telugu developed by the Department of Education, S.V. University, Tirupati, were used to measure the reading attainment of children and a questionnaire was developed and used to obtain information regarding the

various aspects included in the study. High achievers, average achievers and low achievers were identified by using the information obtained through the questionnaire. Chi-square technique was used to examine the association between the reading attainment of children and other variables. Correlation matrices and step-wise multiple regression analysis were also tried on the basis of scores derived by giving proper weightages for the variables and adding them for statistical purpose.

The findings of the study were: (i) Home conditions, school conditions, and personal attributes of children collectively influenced their reading attainment in primary schools. (ii) With respect to home conditions, type of house, home reading facilities, educational level of parents, occupation of the parent, income of the family, and social participation of the members of the family influenced the reading attainment of children positively. (iii) Among the school factors, accommodation, educational level and experience of teachers, availability of instructional materials, books and reading room facilities influenced the reading attainment of children positively. (iv) Among the personal attributes, general mental ability, visual discrimination of words, auditory discrimination of sounds, clarity of speech, reading habits and interest in reading influenced their reading attainment positively. (v) Among the three broad categories, namely, home conditions, school conditions, and personal attributes of children, personal characteristics had greater influence than the other two variables. Between school conditions and home conditions, the influence of school was greater than that of the home background on the reading attainment of children.

**\*1020.** SRIVASTAVA, K.K., *The Effects of Family Anxieties on Educational Achievements of Adolescent Girl Students (13 to 18) of the District of Basti*, Ph.D. Edu., Gor. U., 1978

The study had the specific purpose of finding out the nature of family anxieties of adolescent girls in the age group 13 to 18 and knowing the extent to which they influenced the academic achievement of these girls. The study tested the hypotheses concerning the family anxieties on twelve areas and their relationship with educational achievement. These areas were: (i) indifferent attitude of parents, (ii) authoritarian attitude of parents, (iii) loose control of the family upon children, (iv) inconsistent discipline, (v) overprotection, (vi) feeling of insecurity, (vii) poor economic condition, (viii) the number of siblings, (ix) broken homes, (x) tension

among the members of the family, (xi) lack of formation of moral sentiments, and (xii) lack of sex education.

In order to find out the family anxieties of teenage girls, the investigator consulted many psychiatrists and psychologists and finally prepared a questionnaire relating to family anxieties containing twelve areas, which was administered to 1,000 adolescent girls of eighteen recognized institutions of the district of Basti. The questionnaires were administered class-wise. Afterwards the girls were asked to write an essay expressing their ideas on the effect of family anxieties on educational achievement. After the completion of the essays, one hundred most anxiety-ridden girls selected on the basis of their essays and the failures were interviewed on a twenty-item interview schedule. Achievements of the girls were obtained from the college records.

The conclusions of the study were: (i) The most serious family anxiety of the adolescent girls in Basti was their parents' indifferent attitude towards education. (ii) The guardians believed in old traditions and were responsible for the girls' absence, late coming, lying, etc. (iii) The guardians' outlook about cinema was undergoing a drastic change. (iv) Many guardians lacked consistency in their behaviour with adolescent girls. (v) The adolescent girls had to seek their guardians' permission even in trivial matters, which shattered their power of self-judgement and self-confidence, and this made it difficult for them to face the realities of life. (vi) Most of the girls lacked attention from parents. (vii) The adolescent girls needed moral education as well as sex education. (viii) A number of siblings shared the meagre means of the family and the tension in interpersonal relation of the family caused anxieties among the adolescent girls. (ix) Family anxieties did not significantly affect the educational achievement.

**\*1021.** SRIVASTAVA, N., *Intelligence, Interest, Adjustment and Family Status as Predictors of Educational Attainment of High School Students*, Ph.D. Edu., Gor. U., 1980

The objectives of the study were: (i) to determine the extent of relationship between high school achievement and general mental ability, adjustment, interest and family status, (ii) to develop regression equations for the prediction of achievement from each of the above independent variables, (iii) to locate the variables relevant for prediction and to determine the multiple correlation between the selected predictor variables and high school science group achievement, (iv) to derive the multiple re-



gression equation for predicting achievement, and (v) to determine the efficiency of prediction in terms of the extent of positive and negative fluctuation of obtained marks from predicted scores, the trend of failure in examination at different levels of prediction, and the trend of fluctuation of the obtained results from the predicted scores at different levels of prediction.

A total number of 500 students (415 boys and 85 girls) were selected from fourteen intermediate colleges of Gorakhpur. Mean, standard deviation, correlation, regression equations and multiple correlation coefficient were calculated. The results were: (i) There was substantial correlation between intelligence and achievement and moderate correlation between achievement and socio-economic status, and between intelligence and socio-economic status. (ii) Scientific, clerical interest and educational adjustment were substantially correlated with achievement. (iii) Mechanical interest and emotional and social adjustment also had significant positive correlation with achievement.

**\*1022.** TRIPATHI, B.K., *A Study of Relationship between Personality Patterns and Social Acceptance, Classroom Behaviour and Academic Achievement*, Ph.D. Edu., Raj. U., 1978

The main objectives of the study were: (i) to find out the relationship of anxiety with social acceptance, academic achievement and disruptive classroom behaviour, (ii) to find out the relationship of adjustment with social acceptance, academic achievement and disruptive classroom behaviour, (iii) to find out the relationship of extraversion with social acceptance, academic achievement and disruptive classroom behaviour, (iv) to find out the relationship of neuroticism with social acceptance, academic achievement and disruptive classroom behaviour, (v) to find out the multiple regression equation of each of the three criterion variables (social acceptance, academic achievement and disruptive classroom behaviour) with personality variables, intelligence and socio-economic status variables for determining their respective contribution to the variation in the dependent variables, and (vi) to find out the multiple correlation coefficients of each of the three criterion variables with six independent variables to estimate the extent of the contribution of the six independent variables towards the prediction of criterion variables.

The samples consisted of 506 male intermediate class students whose age ranged from 16 to 19 years. The stu-

dents were selected randomly from eleven boys' intermediate colleges in Bareilly. The tools employed were Jalota's Group Mental Ability Test in Hindi, Kuppaswamy's Socio-Economic Status Scale, Asthana Adjustment Inventory in Hindi, Sinha's Anxiety Scale, Jalota and Kapoor's M.P.I. (Hindi version) for extraversion and neuroticism, sociometric technique, observation device for classroom behaviour, intermediate marks for academic achievement and teacher's rating. Mean, t-test and multiple correlation were used to analyse the data.

The findings of the study were: (i) Anxiety, social acceptance and disruptive classroom behaviour variables had high coefficient of variation of 52.26, 82.37 and 105.85 per cent, respectively. (ii) Intelligence was positively correlated with socio-economic status and negatively with anxiety and neuroticism in a significant manner. Anxiety had positive correlation with neuroticism but negative with adjustment. Adjustment was correlated positively and significantly with extraversion but negatively with neuroticism. Social acceptance had significant positive correlation with academic achievement and a negative correlation with disruptive classroom behaviour. Academic achievement and disruptive classroom behaviour yielded a significant negative correlation. (iii) Social acceptance had a significant positive correlation with intelligence, socio-economic status and adjustment. (iv) A negative correlation existed between social acceptance and anxiety and neuroticism. (v) Students had less variability among themselves on the academic achievement variable as compared to their variability in social acceptance and disruptive classroom behaviour. Academic achievement had a high positive correlation with socio-economic status. Academic achievement had a negative though significant relationship with anxiety. (vi) Students had the highest variability among themselves for disruptive classroom behaviour in comparison with social acceptance and academic achievement. Disruptive classroom behaviour had significant positive correlation with anxiety and neuroticism and a negative though significant correlation with intelligence and adjustment. (vii) Personality variables, either taken together or taken with one or both concomitant variables, contributed significantly towards the prediction of each of the three criterion variables.

**\*1023.** TRIPATHI, C.K., *Relationship between Selected Instructional Methods, Achievement in Science and Pupil Groups Designated as High,*

*Medium and Low Achievers*, Ph.D. Edu., SGU, 1982

The objectives of the study were: (i) to provide data about the efficacy of audio-vision, programmed learning and peer tutoring as instructional methods, (ii) to test the efficacy of audio-vision in terms of comprehension, attention and appeal on the part of students, (iii) to examine the comparative effectiveness of audio-vision, peer tutoring, programmed instruction and traditional methods of instruction, and (iv) to identify an appropriate method of instruction among the methods under experiment for high achievers, medium achievers and low achievers.

The sample consisted of students of Classes VIII and IX of Government Higher Secondary School, Malpur, district Tonk and Bhavani Niketan Higher Secondary School, Jhotwara, Jaipur. In all, seventy-five students were involved in the pilot study and 160 students in the final experiment. Four groups were equated on the basis of intelligence and pre-treatment achievement of the students. Pretest-posttest parallel group design was selected for the experiment. Data were collected using criterion tests, programmed structured interview, teacher's questionnaire, attention profiles, observers' class profile, expert judgement and Jalota's Intelligence Test. The data were analysed by analysis of variance, Scheffe's test and t-test.

The major findings of the study were: (i) The mean gain scores of the students receiving instruction through audio-vision were not significantly different from those of the students receiving instruction through programmed instruction or peer tutoring. (ii) A majority of the teachers felt that the majority of the students found audio-vision instructional method to be quite interesting. (iii) The attention profiles indicated that the audio-vision attracted the attention of a great majority of the students and sustained their attention throughout the length of the programme. (iv) The difference between the mean gain scores of the high achievers receiving instruction through audio-vision and the traditional method was statistically significant. (v) The difference between the mean gain scores of the peer tutoring group of the low achievers and those of the traditional group of the low achievers was not significant.

**\*1024.** UPADHYE, R., *An Experimental Study of the Effect of Stimulating Environment on Change in Creative Ability of Young Children*, Ph.D. Edu., Bom. U., 1981

The major objectives of the study were: (i) to examine the effect of a stimulating environment on the creative ability of young children, (ii) to develop a suitable creativity test for young children, (iii) to examine the relationship of creativity with age, personality factors and factors of home environment, and (iv) to develop suitable tests of home environment and tests of personality characteristics.

The research used an experimental design of the pretest-posttest control group type. The final sample consisted of 400 students in the age group three to six divided into nine groups of four months' intervals. The sample, randomly selected, was equated on age and school environment. The primary independent variable, namely a stimulating environment, was introduced to the experimental group through training activity sessions over a four-month period. Training activities ranged from the usual school room activities such as drawing and action songs to the less often seen activities such as figure finding and playing with words. The sample was limited to three schools each from four distinguishable areas/localities in Bombay. The tools employed, developed by the researcher, were a creativity test for pre-schoolers, a test of home environment and a test of personality characteristics. Variables tested by the individual test of creativity were fluency, flexibility and originality in thinking; the final form consisted of ten items. The aspects of home environment included were in relation to the number of persons, educational level of family and educational qualification, economic status of the family and feeling of emotional security of the child. The test of personality characteristics included tests for intellectual behaviour, social behaviour, emotional behaviour and physical fitness.

The main findings of the study were: (i) The stimulating environment did in fact significantly increase the creativity scores of the experimental group on all test items and in all the three dimensions of creativity. (ii) The factors of home environment considered did not significantly affect creativity at this age. (iii) The social and intellectual behaviour of children was significantly correlated with creativity, whereas the emotional behaviour and health did not correlate significantly with creativity at this age. (iv) Creativity could be grouped with personality characteristics such as curiosity and initiative.

**\*1025.** VATS, A., *Biochemical Correlates of Scholastic Achievement, Achievement Motivation, Creative Functioning and Anxiety*, Ph.D. Edu., Mee. U., 1980

The major objective of the study was to find out the relationship between serum uric acid and serum cholesterol with scholastic achievement, achievement motivation, creative functioning and anxiety.

The subjects who participated in the investigation were chosen from the adolescent population of the Union Territory of Chandigarh. They were enrolled in under-graduate classes of the Panjab University. The sample consisted of 150 male students. The tools used were the Sentence Completion Test (Mukherjee), Torrance Tests of Creative Thinking and Sinha W-A Self-Analysis Form. To assess scholastic achievement, aggregate of the marks of the subjects in the last examination was considered. For analysing serum uric acid and serum cholesterol for the blood drawn intravenously from each individual, the methods of estimation used were Phosphotungstate Method to estimate serum uric acid and Calorimetric Method to estimate serum cholesterol. Measures of central tendency, dispersion, skewness and kurtosis were computed to check the normality of distribution for all the thirty variables included in the study. One way analysis of variance, product moment coefficient of correlation, tetrachoric correlations and factor analysis were used to analyse the data.

The findings of the study were: (i) Serum uric acid and scholastic achievement did not show significant relationship. (ii) Serum cholesterol and scholastic achievement did not show significant relationship with each other. (iii) The differences in the mean serum uric acid level of above average, average and below average (on the basis of achievement) were not significant. (iv) Controlling serum cholesterol, the association between serum uric acid and scholastic achievement was significant only for the subjects who had low cholesterol level. (v) Serum uric acid was not significantly related to the factor of achievement motivation. (vi) The correlation coefficient of serum cholesterol with total scores on achievement motivation was significant at .01 level. (vii) The relation of verbal fluency, verbal flexibility, verbal originality and the summated scores of verbal creativity with serum uric acid was not significant. The relationship of serum uric acid with non-verbal originality was significant. (viii) Serum cholesterol was positively and significantly related with non-verbal flexibility, non-verbal originality and non-verbal total scores. (ix) The correlation between serum uric acid and anxiety scores was not significant. (x) The relationship between serum cholesterol and anxiety scores was not significant. (xi) Varimax rotated factor analysis yielded nine factors: non-verbal creativity, verbal creativity; achievement motivation, accomplishment, physical factor, physio-chemical factor,

biochemical factor, stress anxiety and maturity.

\*1026. VERMA, R.P.S., *A Study of School Learning as a Function of Socio-emotional Climate of the Class*, Ph.D. Edu., Raj. U., 1977

The objectives of the study were: (i) to compare the socio-emotional climate prevailing in the schools of rural and urban areas so as to develop more objective knowledge and understanding of how our schools in urban and rural areas were functioning, (ii) to compare the socio-emotional climate of the classes taught by male and female teachers so as to identify the effect of sex on the classroom climate, (iii) to examine the effects of the classroom climate on the behavioural activities of students in the classroom, (iv) to investigate the relationship between the socio-emotional climate of the classroom and the academic achievement of pupils, (v) to identify and analyse the patterns of classroom climates, (vi) to develop a pupil perception rating scale for measuring the socio-emotional climate of the classroom as generated by certain patterns of teacher behaviours, and (vii) to develop a sociometric test for measuring the behavioural development of pupils as perceived by the members of the class.

The sample consisted of forty-one higher secondary schools (thirty-three boys' and eight girls') selected randomly from twenty-six districts of Rajasthan. From the sampled schools, 1,294 students (974 boys and 320 girls) were selected by the stratified random method. The tools used were Jalota's Verbal Group Test of General Mental Ability, Teacher Classroom Behaviour Sociometric Test, Attainment Test in Social Studies, Attainment Test in General Science and Socio-Economic Status Scale. Mean, standard deviation, skewness, kurtosis, product moment correlation, analysis of variance, multiple correlation, partial correlation, multiple regression were employed to analyse the data.

The findings of the study were: (i) Mean differences for emotional warmth, fairness, acceptance, trustfulness, communication, achievement and IQ variables were significant. (ii) The rural school classes showed slight superiority over the urban school classes as far as acceptance, trustfulness, adaptability and emotional relationship dimensions of the classroom climate were concerned. The academic achievements of the urban-rural schools were at par but there was significant difference in the intellectual standards of the rural and the urban pupils. (iii) The mean differences for all the eight dimensions of the classroom climate for adaptability and



emotional relationship were significant in favour of the classroom of the private schools. The classes of the privately managed schools had a more learning-conducive climate. (iv) The socio-emotional climate of the classroom not only predicted and influenced the pupil's academic achievement but also affected his classroom behavioural development. The classroom climate was positively correlated with the studiousness factor of the sociometric test. The classroom climate was negatively correlated with the behavioural development of the pupils in the class and also with the mischievousness factor. (v) The pupils' classroom behaviour was positively correlated with their academic achievement. All the components of the studiousness factor and the composite studiousness factor were positively correlated and the mischievousness factor and its components were negatively correlated with the pupil's academic achievement.

**1027.** VIJAYALAKSHMI, J., *Academic Achievement and Socio-economic Status as Predictors of Creative Talent*, Dept. of Psy., Ker. U., 1980

The study aimed at finding out the extent to which academic achievement and socio-economic status served as predictors of the creative talent. In view of these objectives, the study examined the following hypotheses: (i) High creatives differed significantly from low creatives with regard to academic achievement. (ii) High creatives differed significantly from low creatives with regard to socio-economic status.

The sample comprised 425 pupils attending six selected secondary schools from the urban and rural areas of a district in Kerala. Care was taken to see that almost an equal number of boys and girls was included. The stratified proportional sampling technique was employed for the selection of the sample. The tools used were Nair's Kerala University Test of Creative Thinking and Nair's Socio-Economic Scale Data Sheet. Academic achievement was measured in terms of the average of the marks obtained by the pupils in different school subjects in the first and the second terminal examinations. The t-test was used for data analysis.

The major findings of the study were: (i) There was significant difference between the high creatives and the low creatives in academic achievement. (ii) There was significant difference between the high creatives and the low creatives in socio-economic status. (iii) The average academic achievement of the high creatives was more than the average academic achievement of the low crea-

tives. (iv) Socio-economic status had a facilitating effect on the creative ability of the pupils.

**1028.** ZACHARIA, T., *Impact of Attitude and Interest on Achievement of Secondary School Pupils in Social Studies*, Ph.D. Edu., Ker. U., 1977

The main objectives of the study were: (i) to find out the general nature of pupils' achievement, attitude and interest in social studies for the total sample, (ii) to compare the scores of achievement, attitude, interest and intelligence of the different sub-samples, and (iii) to find out the effect of attitude and interest on the social studies achievement for the whole sample and sub-samples classified on the basis of intelligence, sex, age and socio-economic status.

The sample consisted of 800 pupils drawn from standard X of different schools in the Alleppey revenue district of Kerala, selected on the basis of the proportionate stratified sampling technique. A standardized achievement test in social studies for Standard X, attitude scale, interest inventory and Standard Progressive Matrices were used for the collection of data.

The major findings of the study were: (i) There was high positive correlation between the secondary school pupils achievement in social studies and their attitude. (ii) The pupils' interest in social studies was closely related to their achievement in the subject at all levels. (iii) The pupils' intelligence was a major factor in influencing their achievement in social studies. (iv) The pupils' attitude and intelligence scores were more or less equally correlated with their achievement in social studies. (v) The pupils' intelligence was not a prominent factor in influencing their attitude and interest in social studies.

**1029.** ZACHARIAH, S., *Fantasy Life of Adolescent Girls and Its Influence on Educational Achievement*, Ph.D., Edu., Ker. U., 1982

The study intended to (i) investigate the fantasy life of adolescent girls in terms of content, intensity of occurrence, hierarchical pattern of areas and their intercorrelations, (ii) compare the fantasy materials explored by different techniques, and (iii) relate the fantasy life to educational achievement. The major hypotheses were: (i) The relationship between the global fantasy and the educational achievement of adolescent girls will be negative. (ii) The negative relationship between the global fantasy and the educational achievement of ado-

lescent girls will be influenced by intelligence and personality factors. (iii) There will be positive relationship between certain fantasy areas and educational achievement. (iv) The correlates of educational achievement will show a differential pattern of relationship of fantasy.

A fantasy inventory, prepared for the study using the data obtained from the self-reports of fantasy of 400 adolescents and from semi-structured group interviews of 100 adolescents, was administered to a sample of 962 adolescent girls. The other tools for obtaining information on the fantasy life were an opinionnaire on content and conditions conducive to day-dreams and nocturnal dreams, Sentence Completion Test, and Spontaneous Story Writing Test. Nafde's Non-verbal Test of Intelligence, Kerala University Personality Scale, Value Inventory and questionnaire to obtain personal information were also administered. The data were analysed by

calculating percentages and rank scores, applying tests of significance, computing coefficients of contingency, calculating product moment coefficients of correlation and partial and multiple correlations.

The major findings of the study were: (i) Fantasies were classifiable into systematic, casual, differentially occurring, and rarely occurring. Educational fantasies occupied the highest rank in terms of frequency of occurrence with social fantasies getting the second rank. (ii) Intelligence and personality decreased the negative relationship between the fantasy life and educational achievement. (iii) The relationship between the fantasy life and educational achievement was negative for all the subjects and for most of the fantasy life. (iv) Of the six value areas, the aesthetic value alone had positive significant relationship to the fantasy life.