

## Learning, Motivation and Personality

### A TREND REPORT

S. B. MENON  
J. M. OJHA

---

One of the chief concerns of research in education is the understanding of those social, psychological and cultural factors that influence the process of learning, which, in turn, is perhaps the single most important component of education. Not that all education is learning or vice versa, but it certainly is the foundation on which the educational superstructure is built. Hence the subject of learning—and by implication, the learner—has always been the most important subject of educational research.

Looked at this way, we can visualize these forces and interrelationships between them in a field where the learning is the main focus and is influenced by several factors—developmental, personal and environmental—which act upon the learner and thus also influence the process. This is a continuing action-reaction process which along with deliberate educational inputs, results in learner changes. This is shown roughly in Figure 1 where the processes are shown as acting upon the learner and also interacting between themselves.

It is from this point that the present classification of apparently discrete categories assumes significance. Though motivation is a personality variable, it is also educationally significant because it provides the necessary urge to learn and to receive the benefits of education. However, motivation is also subject to environmental influences. There is sufficient evidence which shows that social motivations, especially the need for achievement, with which we as educationists and also others are most concerned, have an acquired behavioural syndrome. As such, appropriate behaviours can be developed with suitable training, in other words by education. As all these categories are

to be seen in the learning situation, the studies reported in this chapter do throw considerable light on the work that has been done in this area and the way our scholars and educational researchers perceive this interdependence between learning, personal variables and environmental factors leading to proper motivation to work, an important infrastructure.

The present report takes up the social-psychological field explicated above as the framework in which research studies included in the areas—learning, motivation and personality—are to be viewed. All the studies, however, do not have this framework implicit in their premises, but they all do have a relevance to the learner and learning process. The whole area is subsumed here in an educational perspective, that makes the field a unified one although the psychologists tend to treat these three as distinct areas of research with different preoccupations and methodology. The framework presented earlier for the purpose of the present chapter serves as a perspective in which each research study included would fall in its legitimate place and thus the trends would become delineated and coherent. What one expects from research studies is that the prime focus would be the learner: the learner with his personal characteristics, background variables, school environmental variables, learning behaviours and developmental trends.

We may also distinguish here between learning which is a process and the learner who is the beneficiary of this process. While learning is influenced by socio-cultural factors and contrived educational environment as also by the home environment, the learner himself is a bundle of various traits, capabilities and aptitudes which, through interaction with his environment, shape

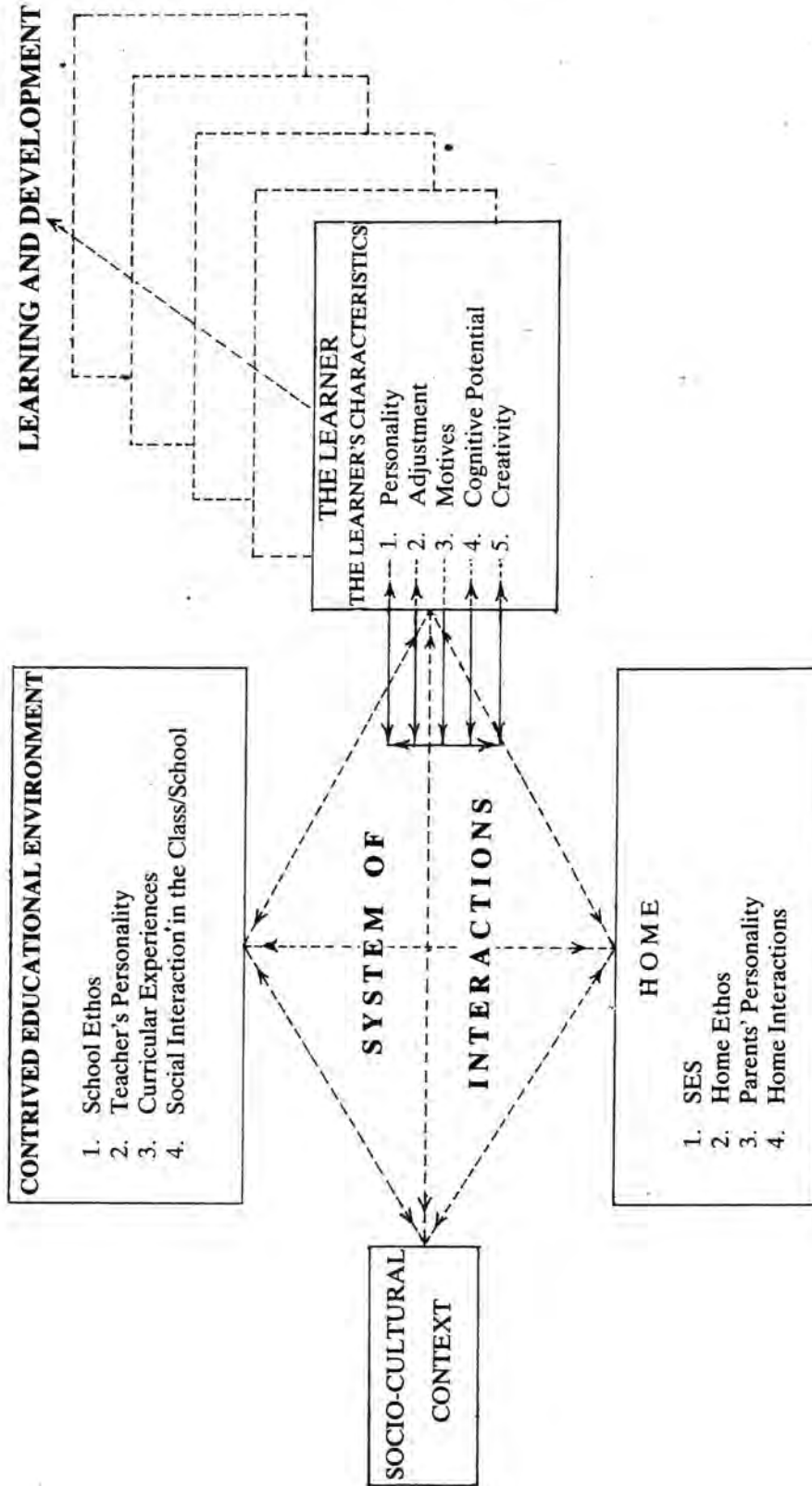


Fig. 1. Social Psychological Field in Education — the Conceptual Framework

him. The learner, we may not forget, is a product of existing social and cultural environment and the learning process to be effective must consider the unique world of learners. In fact it is this interaction between the educational inputs, learning process and the learner which makes education a fascinating science. It is here that the seeds are sown so that with proper environmental support coupled with individual uniqueness, a living tree is helped to grow and contribute its worth to the nation and to the mankind as a whole.

### System of Classification

The conceptual framework formulated here generates a system of classification of the research studies. Since the learner is the prime focus of this area of research, the system of classification is essentially based on the different perspectives from which one could view the social psychological dynamics in which the learner is the centre. The main classes of research that assume meaning in the present framework are: (1) Learning and Development, (2) Motivation to learn, and (3) Learner characteristics. This system of classification is a priori one and is not a pragmatic grouping of research studies included in this volume. In fact, if one examines the studies and tries to evolve a system of classification a posteriori, one may not be able to arrive at a unified typology since the studies do not take into cognizance the framework accepted here, or for that matter any single framework; the concerns, preoccupations and perspectives of these studies are very diverse. When one tries to draw trends within the three classes of research mentioned above, one finds the need for adopting some form of sub-classifications within them, for the sake of clarity and coherence in presentation. Here, we have found it difficult to arrive at one single typology. Certain categories of research, in terms of the variables selected or sample studied, are found to attract greater number of studies than others. Hence, more than one typology has been accepted here (see Figure 2). For instance, under the class Learning and Development, the sub-classes or categories of research which emerge are: (1) Aspects of development, (2) Learning and development in relation to other variables, and (3) Inputs inducing learning and development, or changes in the learner characteristics. These three categories correspond to one typology. But another category of research has been added, viz., studies with a cognitivist perspective. This category obviously

does not belong to the same typology. But this addition has become imperative since the cognitive psychologists' influence in this area of research is a new trend worthy of being highlighted. This results in the categories overlapping one another and some of the studies being mentioned under more than one category. Also a priori framework and system of classification could result in a few studies not fitting into this framework at all. Since the framework adopted here is very broad and flexible, such an eventuality, it is hoped, would be rare.

### An Overview

This chapter is organized in three sections keeping in view the framework accepted herein, and the typology it suggests. Each class of this classificatory system would be taken up in order and the conceptual understanding that the research studies contribute would be presented briefly in terms of the relationship they highlight. What follows that would be a general discussion about the conceptual status of this area of research, the methodological issues involved and the implications of the research in this field to the educational practices. Thus, the first part of what is to follow would be classificatory and descriptive and the second part interpretative and evaluative. The focus would be less on individual studies and more on the overall trends.

### The Quantum

If one goes by the number of research studies conducted, one finds that Learning, Motivation and Personality receive considerable attention. Out of over fifteen hundred studies covered by the two surveys of educational research (Buch, 1974, 1979), one hundred and forty were in this area. This was the second in the rank order of areas according to the number of studies included in them. Out of about fifteen hundred studies, mostly conducted since 1978 or so, which have been included in the present volume, two hundred and twenty-six studies are in this area, which means that this area has all through been quite popular and of late has attracted more research studies, in absolute terms as well as in proportion. This is understandable considering the influence the behavioural measurement schools of psychology have always been exerting on the conceptual preoccupations and methodology of research studies in education. Also, most researchers in education have had their orientation and training in

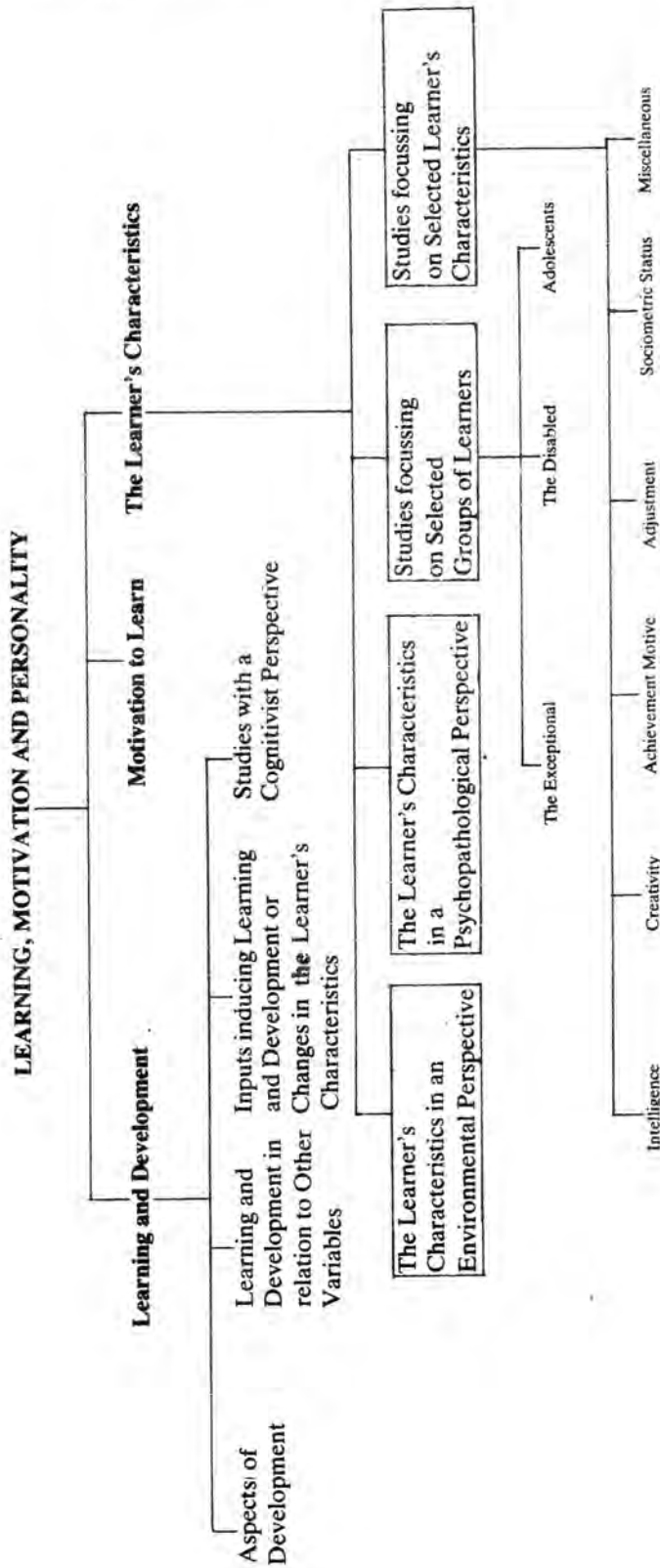


Fig. 2. System of Classification

psychological theories and methods. This alliance between the two disciplines has its positive points in that psychology has lent education several useful theoretical systems, tools, methods and practices. But there have been negative points also. To these, we will return towards the end of this chapter.

## LEARNING AND DEVELOPMENT

### Aspects of Development

A few studies share a developmental perspective in viewing the learner or specific aspects of his cognitive, affective or physical self. They either establish norms of development, study specific stages in a developmental sequence or trace the emergence of specific concepts. Rao *et al.* (1979) have reviewed several studies of this category. (Syamala, 1961; Merchant, 1961; Joshi, 1963; Mehta, 1964; Phatak, 1979; Chhattopadhyay, 1971; Rao, 1975; Seth, 1975; etc.). In this volume a few more developmental studies are given.

In the cognitive dimension, a few studies are reported. Mental development of children from two to five has been traced by Narain (1969). Shukla (1973) studies the development of psychological space perception in children. Nalinidevi (1976) probes into the development of number concept in young children. Saddiqui (1979) studies the development of verbal behaviour in relation to SES and personality. Vaidya (1979) studies the growth of logical thinking in science during adolescence. He extracts ten factors—schematic learning, general adjustment, problem orientation, symbolism, testing hypotheses, aspect character, intelligence, etc. The child's conception of movement is studied by Chand (1980). Arya (1981) studies the growth of scientific concept among elementary school children. Jabbar (1981) studies the development of mathematical concepts in school-going children.

Badami (1974) studies a few aspects of motor development among pre-schoolers.

Moral development in children is studied by Rani (1968). Srivastava (1981) does a psychological study of development of moral ideas among university students.

In the affect dimension, there are a few studies. Dixit (1963) traces the development of personality characteristics as revealed by the Rorschach test of children between five plus and ten plus. The development of fear is traced by Sidana (1971) among primary school children. Devi (1975) conducts an analytical

study of social development of nursery school children. The development of prejudice is studied by Vyas (1971), Sharma (1978) and Sharma (1979). All the three studies are on young children. The emergence of the sense of humour in children is studied along with its educational implications by Dhar (1981). Srivastava (1982) studies the development of aesthetic sense in the higher secondary school students.

### Learning and Development in Relation to Other Variables

Rao *et al.* have reviewed a few studies relating learning behaviour or a developmental characteristic with other variables (Misra, 1968; Vaidya, 1974, etc.).

A few more studies have been reported since then and they are being reviewed here. Perception has been studied by Kumari (1972) and Jain (1976). Kumari studies intolerance of ambiguity and differences in perception. She reports that low intolerance of ambiguity tends to increase speed of perception. Jain studies the effect drive, work-rest ratio on perceptual motor reminiscence.

Related to science learning, there are three studies (Shukla, 1980; Pillai, 1981 and Rai, 1982). Conservation and scientific creativity are studied for relationship by Shukla. Pillai studies the sex difference in certain personality and aptitudinal dimensions related to science achievement. Rai probes into problem-solving in science of students of varying level of creativity.

Malhotra (1975), Ajwani (1979) and Saxena (1980) study problem-solving. Its relation with personality, drive and practice is studied by Malhotra. Ajwani studies problem-solving in relation to personality, intelligence and age. Decision-making is seen in relation to problem-solving by Saxena.

There are a few studies on learning, retention, memory, etc. (Dutta, 1960; Deshpande, 1976; Zafar, 1976; Gupta, 1981). Learning and retention as a function of affectivity is studied by Dutta. Deshpande studies anxiety, background meaningfulness and isolation effects in serial verbal learning. Zafar studies retention of phonemic and semantic information in short and long term memory in relation to personality variables. Problems of adolescent girls and their effect on paired associate learning are studied by Gupta (1981).

A few studies have a cognitive perspective (Das, 1978; Achamamba, 1979; Sandeep, 1979; Ananthakrishnan, 1980; Reddy, 1980; Amin, 1982). Das studies effects of certain non-intellective variables upon cog-

nitive learning among elementary school children. Achamamba relates cognitive efficiency with personality and perception of time. Classroom interaction and cognitive development in primary school children is studied by Sandeep. Ananthakrishnan studies concept formation in relation to various professional and non-professional courses among university boys. Reddy probes into factors related to the development of conceptual generalizations among adults. Amin traces the relationship between spatial egocentrism and conservation of length and area in school children.

A lone study relating development of an affect component with cognitive and personality factors is that of Bhutani (1972). The study is on the effect of some cognitive and personality factors on attitude change.

#### **Inputs Inducing Learning and Development or Changes in Learner Characteristics**

One main concern of educational psychologists has been to find out viable alternative inputs to be provided which would optimally influence changes in the learner characteristics or optimize learning and development. What educational practitioners are looking up to the educational psychologists is for knowledge concerning how best the learning environment can be organized so that learning is maximized or rather desired changes in the learner characteristics are optimally brought about. Research in this area has given considerable attention to this question. Several of such studies are with a pure psychological perspective. But quite a few others are taking into consideration the concrete educational situation and its unique problems.

Seth (1974) studies the learning process with special reference to audiovisual aids and reports that audiovisual aides enhance learning. Aziz (1977) studies generalization of verbal learning in relation to variation in stimulus characteristics. He reports that generalization decreased with decrease in similarity between test items and the original learning items. Generalization was greater under the condition of intentional learning than under the condition of incidental learning. Gupta (1978) studies the impact of vocational training on the behavioural modification of adolescent boys. He reports a positively high enhancement in attitude towards work values and training which is also related to their performance. Gupta (1978) investigates the role of organizing strategies and methods of presentation on short-term retention. The study

reveals that the visual mode of presentation is significantly better than auditory mode in effecting retention. Nagar (1979) studies the role of note-taking, rehearsal and test events on immediate and delayed production of verbal materials and found the roles positively affecting retention. Shivaneekar (1979) studies the effect of pictures and contextual conditions on learning responses to printed words. He finds association of pictures or any contexts with new words to be learnt to have an adverse effect on learning them in English, Devanagari and Malayalam. Chopra (1982) studying the effect of partial reinforcement and different types of reinforces on resistance to extinction in pre-primary children, reports both praise and candy to be reinforcing children. He further reports, that irrespective of the reinforcer used, the administration of reinforcement on 25 per cent of the trials led to greater resistance to extinction. Dwivedi (1982) reports non-meaningful learning to suffer from retroactive as well as proactive inhibition.

A few studies are on inputs for concept learning or cognitive development. Rai (1968) studies the effect of differential pre-training and presentation methods on concept formation. Presentation methods, it is reported, have an effect on concept formation. Rath and Patnaik (1979) study the effect of training on scores on progressive matrices, verbal reasoning tests and in conservation of volume and length. Improvement in scores on progressive matrices and verbal reasoning was reported. Regarding conservation, as age increased training had much greater effect. Padmini (1980) tries out the efficacy of instructional inputs for fostering cognitive development in first standard pupils. The input strategy is based on Piagetian theory and involves situations concerning selected cognitive concepts. The study reveals the effectiveness of the inputs. Gakhar (1981) identifies variables of educational environment as related to the acquisition of mathematical concepts at the junior secondary stage. Teaching methods, student-teacher interaction in the classroom and school tradition are found to be good predictors of performance in mathematics.

Manipulation of affect attributes forms another class of studies. Jain (1971) studies the effect of meditation on personality change. He reports improvement in adjustment, study interest, concentration, etc., and reduction in anxiety. Bhatia (1977) experiments on the effect of reciprocal inhibition therapy on anxiety in adolescents and concludes that the relaxation therapy maximally helped control emotional instability:

it also reduced ergic tension and somatic reactions but not more than other components of anxiety. Bhargava (1978) reports the imitation of sharing behaviour in children is affected by the model generosity, but not vicarious reinforcement. Srivastava (1981) compares two techniques of behaviour modification in reducing examination anxiety. The two techniques are group relaxation method and self-desensitization procedure. The self-desensitization is reported to be the superior technique.

There are three studies on learning among mentally retarded subjects (Embar, 1973; Goel, 1978; Gonsalves, 1978). Embar reports positive effect of institutionalization on the social development of mental retardates. Goel studies Von Restorff phenomenon in serial learning among mental retardates. Gonsalves reports effectiveness of programming as a measure in teaching mentally retarded children to discriminate between forms.

Bhattacharya (1982) studies learning disabilities of primary school children in arithmetic with reference to the diagnosis and prevention. The study reveals that teaching through audio-visual aids enhances learning and affects prolonged memory.

#### Studies with a Cognitivist Perspective

There is a new trend in Indian research in this area, that is, the emerging influence of the cognitive psychologists. In line with the changing Anglo-American trends, there seems to have been developing a new wave in research in the psychology of learning here also. Problem-solving, concept formation, and logical operations have started attracting the attention of a few researchers. Studies based on the cognitive development theory of Jean Piaget are an evidence of this trend. Apart from the study by Syamala (1961) reviewed by Rao *et al.* a few more Piagetian studies are included in this volume, and are reviewed under the various sections in this chapter. The studies are mostly on the development of various concepts of the Piagetian framework, and their relationship with other variables. This departure from the behaviourist psychology is welcome. However, these studies do not seem to have taken up the Piagetian methodology involving clinical interview and qualitative analysis. The trend is to psychometrize and use paper pencil tests. The Piagetian studies included in this volume are of Nalinidevi (1976), Rath and Patnaik (1979), Vaidya (1979), Chand (1980), Padmini (1980), Shukla

(1980), Arya (1981), Sandhu (1981) and Amin (1982).

#### MOTIVATION TO LEARN

Since learning is a voluntary autonomous activity where learner is the active element and since the most the instruction system can do is to create a supportive environment for learning, one crucial problem that educationists often have come to face is that concerning the readiness for and involvement in learning on the part of the learner. This ushers in the concept of motivation. Psychologists of learning, curriculum theorists and others have been concerned with the motives to learn in children and also about how to create motivation in them to learn. Unfortunately, not many research studies have been done in this area in India. Studies on motivational components in teaching methods and media; inducing motivation to work in teachers, etc., could be worth undertaking. Rao *et al.* in their review of research in this area, discuss mostly achievement motive studies under the caption of motivation. One would, however, tend to think that the majority of the achievement motive studies, at least the ones that have been reviewed by Rao *et al.* except one study (Pareek and Rao, 1971) and those which are included in the present volume, take achievement motive as just another personality variable and as such it does not throw much light on the process of motivating the learner. The studies on achievement motive are, however, of considerable number. They are reviewed under a separate section in this chapter.

Pareek and Rao attempted motivation training on teachers, meant to improve the students' mental health. At least two studies included in this volume have proved into the concept of motivation to learn. Singhaulakh (1979) identifies the factors which influence students' motivation to school work, and tries to relate the trait with certain other variables like type of school, sex, rural/urban background, etc. The study concludes that motivation has a significant positive relation with school performance and achievement. For the purposes of the study a test to measure student motivation is constructed and validated. Ushadevi (1981) studies the motivational pattern of evening students studying in Bangalore University. She reports that the knowledge motive category is overriding the other motives for taking up evening courses.

Two studies including academic motivation as a variable are included in this volume. Bisht (1980)

studies need for academic achievement and its effects on academic stress on students. Nagalakshmi (1982) investigates perceived parental behaviour as related to academic motivation.

## LEARNER CHARACTERISTICS

### Learner Characteristics in an Environmental Perspective

In the attempt at establishing casual links between the learner characteristics and environmental variables, several research studies focus on one or more personality or other organismic characteristics with variables pertaining to the cultural milieu, family, school, etc., socio-economic status being a very favourite variable used here. Other more specific social background variables also have been taken up for possible interaction with the learner characteristics.

Rao *et al.* have reviewed one study (Srivastava, 1974) which traces personality characteristics to the cultural milieu among criminal tribes of U.P. Sharma (1977), having observed significant differences in the achievement, dominance, conflict, defection, attitude toward religion, intelligence, extroversion-introversion between Khasi and Naga tribes, traces the differences to certain dissimilarities in the cultural practices of the two tribes.

A few studies have been on the learner characteristics of the deprived communities. Jechuck (1978) reports cumulative deficit of socially disadvantaged children on Jensen's Level II tests. Ramkumar (1979) reports acute self-concept in a very high percentage of backward community adolescent girls. Kamat (1981) observes difference in self-concept, scholastic achievement, educational and vocational aspirations, etc., between backward and non-backward class adults. Dubey (1982) reports that scheduled caste adolescents have significantly higher mean on ego defensive and extraggressive but lower on need persistent, introgressive and irregressive reactions as compared to the non-scheduled caste ones. The scheduled caste young adults did not differ significantly on any category of reactions to frustrations from the non-scheduled caste ones.

Family has been popularly recognized as a powerful source of influence on the child's personality and other related traits. A few studies have attempted to trace specific parameters of the family influence on the child's personality make-up. Rao *et al.* have re-

viewed one study (Smart, 1970) which relates self-esteem and social personal orientation to parental behaviour. Mathur (1971) finds mother's being employed to be a significant variable affecting pre-school children's disposition on dependence, aggression, anxiety, perception of father's role and outcome. Shah (1976) reports that mother's authoritarianism significantly affects fifteen factors of the I6 PF. Low authoritarian mothers tend to have children who are more mature, emotionally accepting, trusting, warm, sociable and interested in people, cultured, radical and independent minded than children of their high authoritarian counterparts. Children with both parents low in their authoritarian attitudes are reported to be good natured, cooperative, attentive to people, soft hearted, kind and adjusting as compared to their counterparts whose parents are high in authoritarian tendencies. Barlinge (1977) reports that children whose mothers are emotionally balanced, duly involved and prudent tend to be less hostile; sanguine mothers have relaxed children; anxiously possessive mothers tend to have tense, negativistic and hostile children; children of high undesirable reaction tendencies have uncontrolled, neglectful rejectant, indulgent, dependence encouraging and strict mothers. Rao (1978) reports social maturity of children to be positively correlated with such parental behaviours as protecting, loving, casual, symbolic love rewarding, direct object rewarding, symbolic love punishing, etc.,. Mentally unhealthy children seem to come mostly from tense family circumstances, as Sarkar (1979) reports; families with syncretic division of functions had children of better mental health. Sarkar (1980) reports relationship between children's attitude towards their parents and their perception of the parents' love. Singh (1980) observes the relation between personality of parents and sex role preference of children. Dominant fathers and submissive mothers tend to have more masculine sons and more feminine daughters than dominant mothers and submissive fathers. Adolescents from joint families, Gupta (1981) observes, tend to exhibit significantly better educational, social, health adjustments. A higher desirability of parental preferences in the social field results in better educational adjustment. Nindru (1981) reports that female college students having mothers pursuing a career or with high educational attainments are significantly more self-oriented in their sex role attitudes. Joint family structure tends to make the girls more traditional. The conclusion of the study is that sex role attitudes of females are closely related to their personality and



environment. Sujatharani (1981) reports the family size to be an important factor in the masculinity-femininity trait and empathic ability. Arora (1981) studies sibling relationships and their psychological and educational implications. Banoo (1982) studies the sex differences in parental press at several socio-economic levels. Vashishta (1982) finds family-reared boys and girls having more of the trait of emotional constructions, creative impulses, dependence, relish for sensual experiences, inhibition for aggression than the institution-reared boys and girls; whereas the latter have more inhibition of sexuality, difficulty in establishing close personal relations, introspection, etc. These studies show a fairly consistent and definite direction in the influence of family on the personality structure of children.

School environment has been studied as a potential source of influence on personality and behaviour of students. At least two studies have this as the primary concern. Sharma (1978) analyses the factors influencing the behaviour patterns of adolescents studying in different school environments. Kumar (1981) concludes that the differences in intellectual or mental factors among secondary school children can be accounted for by the difference in the quality of schooling, if other conditions are controlled.

Socio-economic status as a composite variable or set of variables is also used by a few studies in relation to personality variables. Rao *et al.* have reviewed one study (Bisht, 1972) relating educational aspiration, educational attainment and sex. Four such studies included in this volume are Sarojini (1971), Mohanty (1972), Bhayana (1982) and Magotra (1982). Sarojini finds that problems concerning behaviour, emotionality, neuroticism and adjustment are more for students from low SES than for students from upper, upper middle and lower middle SES. Mohanty reports no influence of SES on aspiration. Bhayana observes high SES adolescents to be more competitive and the low SES to be more cooperative. Magotra relates SES with mental health. Tulpule (1977) reports lower middle income girl students of pre-university classes to be the most maladjusted at home. In emotional adjustment both lower and higher groups are maladjusted. Higher middle group is the most aggressive and least submissive in social contacts. The study also reveals that working mothers do not make any difference with respect to the mode of adjustment of children.

### **Learner Characteristics in a Psychopathological Perspective**

A few studies have a typically psychopathological perspective and consider clinical questions of personality problems of different types, concerning deviant children, problem children and abnormal children. Rao *et al.* have reviewed a few studies concerning juvenile delinquents (Gopalkrishna, 1956; Gupta, 1959; Bose, 1960; Mirchandani, 1970; and Rajguru, 1971). Twelve studies with similar concern are included in the present volume. Hussain (1963) inquiring into the personality adjustment factors discriminating between criminals and normals during adolescence reports that home, income, religion, etc., contribute to criminality. Verma (1959) probes into the social and economic background of juvenile and adolescent delinquency. Sarojini (1971) reports that personality problems in terms of behaviour, emotionality and neuroticism are significantly more during the period of early adolescence than earlier. Bhan (1972) studies deterioration in interest as a function of insecure mental health. Sinha and Bhan (1978) study the mental health of university students and find differential mental health among students from different disciplines. Kalra (1979) studies the etiology and symptomology of psychological problems of children. Aurora (1980) studies the personality factors of deviant and non-deviant higher secondary school boys in a comparative perspective. Bhargava (1980) reveals low negative relationship between neuroticism and self-disclosure and significant relation between schizophrenia and self-disclosure. Academic competence and schizophrenia are reported to have a negative correlation. Yadav (1980) studies the emotional factors in problem children of seven to twelve years. The occupational group background, home environment, drinking, smoking, the quarrelling of parents, the size of the family, etc., contribute to the problem. Nuclear families are reported to have more problem children than joint families. Sadhana Kumari (1980) studies self-esteem and aspiration as factors affecting risk-taking behaviour among deviant adolescent girls. Mental health is studied as a correlate of intelligence, education, academic achievement and socio-economic status in children by Magotra (1982). He reports two factors influencing mental health, viz., intelligence and physical health.

### **Studies Focussing Selected Groups of Learners**

#### *The Exceptional*

A few studies have been conducted on people with ex-

ceptional abilities, talent and proficiencies. Rao *et al.* have reviewed one such study (Lal, 1968) comparing the emotional stability of superior and average children. A few more studies are reviewed here. Pandey (1970) compares super normal and normal adolescents and concludes that they do not differ in home, health and emotional adjustments and aesthetic and religious values. Normal adolescents show better social adjustment than super normals, whereas super normals have superiority in theoretical, economic and political values and have developed better vocational interests. Singh (1978) reports that superior children do not differ from average ones with respect to home, school, health, social and emotional adjustment. The average group showed better adjustment on character traits of personality than the superior group. Parents view superior children to be more emotionally mature than average ones, whereas teachers do not rate them differently. Rani (1979) studying the psychological traits of musically gifted girls at school and college levels concludes that they are more reserved, cool, critical, sceptical and aloof. They tend to be more intelligent, emotionally less stable and quick to grasp ideas and fast to learn. Non-gifted girls are more adjusted than the gifted ones. Kabu (1980) does a psychological analysis of mathematically gifted secondary and higher level students and reports intelligence having significant influence. Three studies are on the personality characteristics of sports stars. Nangia (1980) finds the high performers in sports to be intelligent, emotionally stable, dominant, surgent, suspicious, shrewd, self-sufficient and tense and higher on self-esteem and self-concept. They are more reserved, shy, tough-minded, practical and placid. The high performers have a higher need for achievement, aggression, dominance, recognition, and sex and a lower need for abasement, play and affiliation. Sportsmen differed in their personality from sportswomen. Verma (1980) in a similar study finds sportsmen dominant, happy-go-lucky, having traits of stronger super ego strength, tough-minded, less sentimental, more worldly, shrewd and calculating. Talwar (1981) reports sportswomen to be more emotionally stable, realistic, cheerful, frank, duty-bound, responsive, assertive, venturesome and spontaneous in comparison to non-sportswomen.

### *The Disabled*

Another group of subjects which attracts special research attention is the disabled children. There have

been studies on both physically and mentally disabled children. Mathew (1974), in a study on the inferiority feelings in pupils with and without body defects, finds normal pupils to be low in inferiority feelings as compared to those with body defects; girls are found to have more inferiority feelings than boys. The personality characteristics of the physically handicapped people are studied by Deshmukh (1979). No significant difference is reported in the personality scores of the physically disabled from those of the normal. Siddama (1979) studies the behavioural determinants of obesity in children of age group 9-11. The study reveals unique variations in the measured behavioural characteristics of obese boys and girls. The stresses and coping mechanisms of physically handicapped children are studied by Srivastava (1981). Handicapped children have more stressful life events related to ego threat, uncertainty of the future and living conditions categories. Phatak (1983) studies disabled children in normal schools. The majority of the sample studied feel they do not face any serious problem, the type of problems faced are fear of the school, difficulty with classroom teaching, dissatisfaction with the teacher, ridicule by other children and participation in co-curricular activities. One study on the personality pattern of educable mentally retarded (EMR) children is by Jaiswal (1978). Socio-economic deprivation, cultural impoverishment and familial problems have the same impact on these (EMR) children as on normal ones. The study arrives at a general conclusion that the educable mentally retarded are a little detached, emotionally less stable, exhibiting tendency of self-depreciation, possessing weaker super-ego strength, sensitive, withdrawn, reflective, sentimental, depressive and frustrated. Three studies on the problems concerning learning among the mentally retarded have been reported (Embar, 1973; Goel, 1978; Gonsalves, 1978). They are reviewed along with the studies on learning and development.

### *Adolescents*

There are very many research studies which take adolescents as their sample. This is rather incidental, since the concern need not be to study adolescents, but secondary school children, the population most accessible for research studies in education happens to be in its adolescence. However, there are a few studies which seem to be directly concerned with the problems and peculiarities of adolescents. Problems of adolescents, after all, have been one of the traditional concerns of

educational psychologists. Such studies are reviewed in this section. Kumar (1954) conducts a psychoanalytic study on personality traits of Indian adolescent girls and reports a common tendency in their psyche to confuse between the positive identification with the mother and the internalization of father's super-ego. Shanmugam (1956) investigates the emotional stability of adolescent boys of low socio-economic families. Krishnan (1976) studies the adolescent problems through fantasies and reports significant relations between the problem scores and SES, sex, age, etc. Tripathi (1976) probes into the personality patterns of high and low adolescent self-discloses among Bhotia tribals. Personality, intelligence, values and problems of adolescent girls are studied by Bhagavathy (1977). Gupta (1977) traces the individual differences in value pattern and personality type of the school-going adolescents of eastern U.P. Ramkumar (1979) is concerned with the subject characteristics of adolescent girls with acute self-concept. Bhatnagar (1979) investigates the values, aspirations and personality traits of adolescents of Rajasthan. Vaidya (1979) studies the growth of logical thinking in science during adolescence. A study of ascendance-submission in intermediate students is conducted by Datta (1980). Sharma (1980) studies the satisfaction and dis-satisfaction with school among adolescent boys in relation to their personality, intelligence, scholastic performance and SES. Singh (1980) studies the personality characteristics of adolescent students of denominational and non-denominational institutions. Problems of urban adolescent girls are studied by Gupta (1981) with reference to their effect on paired associate learning. Sandhu (1981) conducts a factorial study of adolescent thought using Piagetian tasks. Self-esteem during adolescence is studied as a function of creativity components, personality, adjustment and values by Srivastava, A.K. (1981). A comparative study of radicalism versus conservatism traits among adolescent boys and girls of intermediate colleges is conducted by Srivastava, P. (1981). Sumbali (1981) studies aggression among children and adolescents. Bedi (1982) studies aspirations of adolescents as related to SES, intelligence and sex.

### Studies Focussing Selected Learner Characteristics

#### *Intelligence*

Intelligence is the most studied variable in the measurement tradition. Relating intelligence with other variables like personality, organismic variables, environment, etc., has been quite a popular research preoccupa-

tion. Most studies on personality are generally found to have an oblique reference to intelligence. However, direct focus on intelligence is given only by a few studies. Rao *et al.* have reviewed a few studies of this type (Misra, 1967; Szeri, 1973; Gupta, 1973; Mohan, 1975). A few studies relating intelligence with creativity are given in the section on creativity. A few more studies are reviewed hereunder. Ojha (1962) studies intelligence and intellectual stimulation during adolescence. Shahin (1971) studies intellectual abilities in relation to psychosocial motor behaviour among pre-school children. Desai (1971, 1974) reports, while studying the effect of birth order and sex on intelligence, that third-born boys excell all others in intelligence, whereas first- and second-born girls tend to be highest among girls. Bhullar (1976) reports that university students with higher intelligence tend to have more favourable attitude towards physical education. Rao (1978) reports significant positive relation between social maturity and intelligence. Alegaokar (1981) reports that high physical achievers have higher IQ than low physical achievers. Kumar (1981) reports difference in intellectual and mental factors to be accounted for by difference in the quality of schooling. Patel (1983) studies relation of diet and growth to intellectual growth among school children in Orissa.

#### *Creativity*

One major concern of the researches in this field had been the phenomenon of creativity. Creativity has been an enigma in that its very nature of being associated with divergent thinking has made it rather elusive to measurement and nurture. Yet, several researches have been conducted in this area. Kumar and Mitra (1979) have reviewed ten studies in this area. The present volume includes at least thirty studies directly concerned with creativity. Considering that the area is still young in India, it is quite an encouraging beginning.

Since the Indian researches in education and psychology are mostly in conformity with the psychometric (measurement) tradition, the first evidences of research in creativity have been mainly in the form of test construction. Mehdi (1970), Passi (1972), Kaul (1974) and Ramachandrar (1975) developed tests or batteries of tests to identify and measure creative abilities. Since these studies have already been reviewed by Kumar and Mitra, they are not discussed in detail here. The only comment that may be added here is that these tests developed in India have really given the necessary initial impetus to research in this field. At least nine studies in-

cluded in the present volume report that they have used Mehdi's tests and at least two have used Passi's test. Four studies included in the present volume involve construction of tests of creativity. Two of these tests are for general creativity and the other two for scientific creativity. The tests of scientific creativity have been developed by Jhag (1979) and Shukla (1980). Jhag's test is based on the content of science subjects up to the high school level and comprises two parts, one pertaining to factors of divergent thinking and the other to convergent thinking, cognition and evaluative categories. Shukla's test measures six SI factors of the twenty-eight enlisted by Guilford and comprises for sub-tests, viz., consequences test, unusual uses test, remote association test and just think why test. The test re-test reliability and concurrent validity have been established. The general creativity tests developed are by Nair (1975) and Kishore (1981). The abstract does not say much about Nair's test except that it includes fluency, flexibility, originality, elaboration and sensitivity to problems and redefinition. Kishore has developed a battery of verbal and non-verbal tests of creativity based on Torrance's concept of creative thinking, again involving tasks revealing traits of fluency, flexibility, originality and elaboration.

The main research interest in this field, from an educational point of view, is to see how this desirable but rare trait interacts with the other personality variables, cognitive and affective dimensions of learning and development, the environment at school, home and general social milieu in order to trace its possible causal and supportive factors. A logical extension to this and a typically educational concern would be to see how best creativity can be nurtured. Both these types of research studies have been undertaken. However, the emphasis has been explicitly on the first type, which are either correlational or comparative, taking creativity both as an independent and dependent variable. Kumar and Mitra have reviewed a few studies of this type (Khire, 1971; Sharma, 1971; Goyal, 1974; Joshi, 1974; and Gakhar, 1975). In the present volume there are twenty-eight studies which test interaction of creativity with other variables.

As regards the relationship between intelligence and creativity, the findings of the study have been rather equivocal. Raj (1978) finds that creativity discriminates between high and low intelligence groups of secondary students in Kerala. Sen Gupta (1979) reports that high and low creative students, in a sample drawn from Delhi polytechnics, differed significantly on intelligence. Qureshi (1980) reports significantly positive correlation between intelligence and creativity. Mehdi (1977), De-

shmukh (1979) and Kishore (1981) admit positive but low correlation between the two variables, among school children. On the other hand, Bhattacharya (1978) reports the level of creativity does not affect intelligence. Gupta (1980) finds both verbal and non-verbal creativity to be independent of intelligence. And, Muddu (1980) reports negative correlation between creativity and intelligence.

Another salient trend is an attempt at establishing relations between creativity and personality variables. Clear differences in the personality profiles between high and low creativity have been reported by Nair (1975), Bhattacharya (1978) and Muddu (1980). Paramesh (1970) reports significant difference between high and low creative adolescent boys in body image, barrier characteristics and also on theoretical and aesthetic values, but no difference in introversion, extroversion, neuroticism, etc. Nathawat (1977) also reports no difference in high and low creative adolescent boys in insecurity-security feelings, neuroticism as well as certain neurotic manifestations, but finds significant difference in ego strength, body image, penetration characteristics, etc. Srivastava (1982) reports a positive relationship between the scores of creativity and those of different personality factors.

As regards the relationship between creativity and anxiety, Parmesh (1970) reports no relationship among adolescent boys while Jayaswal (1977) reports a negative and significant correlation between anxiety and creativity among teacher trainees. On the other hand, Qureshi (1980) reports that anxiety promotes creativity and its components. Dagaur (1981) observes, in school boys of Delhi, that some minimum/optimum level of anxiety is needed to evoke sufficient creative response of originality, while Sheel (1981) interestingly finds anxiety dependent on the fluency, originality dimensions of creativity, among Delhi undergraduate students.

A few studies cover the relationship between creativity and adjustment. Nair (1975) finds differences in adjustment variables between creative and non-creative high school students. No significant difference in home, health, social, emotional and school adjustment between high and low creative adolescent boys has been reported by Nathawat (1977). Asha (1978) confirms the above finding except regarding emotional adjustment where significant differences have been reported among the high, moderate and low creative secondary school students in Kerala. Singh (1979) reports a positive and significant relation between creativity and total social and educational adjustment among secondary school boys of Agra. Gupta (1981) reports that students with

high and average adjustment tend to be more creative.

Apart from the personality variables and other organismic variables, certain relationship would be traced between creativity and the socio-cultural background. A few studies have catered to this. Mehdi (1977) reports relationship between creativity and certain biographical variables among a sample of rural and urban school children of U.P. and M.P. Ahmed (1980) finds positive influence of advantaged home background and school background on the creativity of secondary and higher secondary school children. Creativity is found to be independent of SES by Gupta (1980).

Several other variables have also been covered in the various studies included in the present volume. Frustration, aspiration, interest, achievement motive, values, attitude, emotionality, self-esteem, curiosity, extroversion, linguistic ability, birth order, problem-solving ability, etc., are the variables under study. Since such variables are not prominent among studies in this area, they have not been taken to draw any trend. This is, of course, not to disparage their significance; but only to say they do not demand elaborate discussion here.

Two studies on scientific creativity and its relation to certain variables have been included in this volume. Jhag (1979) reports scientific creativity to be normally distributed and significantly contributing towards the concrete versus abstract thinking. Shukla (1980) finds scientific creativity to be related with conservation of mass, weight and volume of solids and liquids.

On the whole, most of the relationships, tested through the studies, still remain not fully clarified. This is mostly because the findings have been quite equivocal. Attempts at meta analysis, with a careful examination of the assumption involved and the methodology adopted by these studies are required for one to make any meaningful inference about the relationship among the variables.

As said earlier, an important concern of the education researcher with respect to creativity is its development and the possible curricular inputs that might prove fruitful for its nurture. This seems to be the next step in the evolution of this area of research. Probably, this trend is just starting to establish, since only two studies sharing this concern have been included in this volume. Kishore (1981) traces the development of creativity through the grades and age and reports that developmental curves for different creativity measures reveal a consistent increase from Standard VI to VIII, i.e., from age 11 to 13. After the period, he reports, there seems to be a general decline except for non-verbal elaboration up to Standard X, i.e., age 15. Elaboration shows a tendency to

develop with maturity and experience. He further reports that the period of greatest potential productivity is between ages 13 and 14. Though chronologically later Kishore's work falls antecedent to Deshmukh's (1979) who tries to find out experimentally if appropriate manipulation of teaching-learning process could promote creativity. He reports that a strategy of learning Marathi and Social Science involving brain-storming and role-playing has significantly enhanced creativity of the students.

#### *Achievement Motive*

Rao *et al.* have reviewed several research studies in this area (Mehta *et al.*, 1967; Tambhankar, 1968; Mehta, 1969; Rabindradas, 1969; Chaudhary, 1971; Desai, 1971; Desai and Trivedi, 1972; Gokulnathan, 1972; Bhargava, 1972; Dave, 1973; Pathak, 1974; Mohan, 1975, etc.). Mishra (1967) studies certain personality correlates of need achievement among university students. The study reveals that a high n-ach person tends to be less authoritarian, reacts to frustration, is less anxious and has high level of adjustment. Pandharipande (1976) traces the socio-cultural correlates of achievement motive among secondary school students and finds the middle class having a higher n-ach than the lower class. Rao and Vijayasree (1976) study the psycho-social maturity and motivational profiles of management students. Abrol (1977) studies achievement motivation in relation to intelligence, vocational interests, achievement, sex and SES. Boys tend to have higher achievement motivation than girls. SES and family affect achievement motivation. Gupta (1978) studies anxiety and achievement motivation in relation to academic achievement, sex and economic status. Low anxiety group tends to have high achievement motivation and a negative correlation is reported between the two variables. Sex difference in achievement motivation is also refuted. Dhillon (1979) studies achievement motivation pattern of students who participate in physical activities and of those who do not participate. Gupta (1979) reports a positive relationship between psychological stress and achievement motivation. Hussain (1979) studies recall of finished and interrupted tasks under ego and task-oriented conditions in relation to anxiety, need achievement, and need for approval motive as personality variables. Narula (1979) studies achievement motivation in relation to intelligence, SES and performance of prospective secondary school teachers in Orissa. Intelligence, it reports, is independent of n-ach. Zargar (1980) studies need achievement in relation to intelligence, creativity and scholastic achievement. Need achieve-

ment, the study reveals, has a positive relationship with non-verbal creativity. Prakash (1981) studies need achievement of adolescents and their relationship with parents. Saxena (1981) studies need achievement in relation to creativity, values, level of aspiration and anxiety among secondary school students; n-ach is found to relate significantly with creativity and the level of aspiration, and to have no significant relation with anxiety. Sheel (1981) studies task performance as a function of need achievement. It is reported that these variables have a significant positive relationship. Anxiety and need achievement are studied among intermediate students by Singh (1981). Rajeeva (1982) studies achievement motive, its correlates and performance. One interesting study by Trivedi (1982) is on the n-ach score revealed through children's literature in Gujarati. The children's stories are found to contain only 15.5 per cent of achievement imagery and more of task imagery and unrelated imagery. This study has a lot to contribute to the curriculum development.

Kureshi (1966), Koul (1974), Rao and Vijayashree (1976), Agrawal (1980) and Patel (1982) study affiliation motive as a variable in relation to other factors.

#### *Adjustment*

Adjustment is another variable on which quite a few studies have been conducted. Rao *et al.* have reviewed a few studies where adjustment is given a central focus (Nanda, 1957; Bhatt, 1961; Kakkar, 1964; Bhagia, 1966; Patel, 1967; Bhatt, 1971; Sen, 1971; Kumar, 1972; Mattoo, 1972; Pandit, 1973; Pinto, 1974; Pereira, 1974). In the present chapter a few studies covering adjustment as a variable have been reviewed in the section on creativity, and a few in the section on the exceptional children. A few other studies are reviewed hereunder. Pathak (1971) reports that the popular students in a sociometric scale are significantly superior in home adjustment, social adjustment, emotional adjustment, school adjustment and health adjustment. In conclusion, it is reported that sociometric status is significantly related to various ways of adjustment. In a survey of adjustment norms among pre-university girls, Tulpule (1977) reports that 80 per cent are emotionally maladjusted, 30 per cent poorly adjusted socially, 25 per cent poorly adjusted at home, 30 per cent healthwise maladjusted and 58 per cent generally maladjusted. Pandey (1979) finds, among students of higher secondary stage, the rural group to be better in emotional, health and school adjustment whereas the urban group is better in aesthetic adjustment. Significant relationship exists between adjust-

ment, aspiration, and achievement. Goswami (1980) has constructed an adjustment inventory for assessing personality adjustment of adolescent girls. The study reports that the adolescent girls encounter maximum problems in the area of emotional, mental, school, study and home adjustment. Physical adjustment and sex adjustment were the least problematic. Sujatha Rani (1981) reports that adolescent boys of high income status are better adjusted at home than girls. School adjustment seems to become less with the age of 16. Boys are reported to be having better adjustment with the community than girls; community adjustment is not influenced by age, religion and economic status. Vashishtha (1981) reports poor adjustment along with authoritarianism, and conservatism creates alienation among students. These traits also contribute to growth and development of feelings of powerlessness, normalness and social isolation. Poor adjustment in social life is reported to be a significant condition for the development of the feeling of life alienation. Adjustment has significant and negative relationship with authoritarianism and conservatism.

#### *Sociometric Status*

The child's interaction with his class group has been recognized to influence the personality make-up and accomplishment. Since classroom is the miniature society which accepts the child as a full-fledged member and gives him a lot of personal leverage which the outside adult would deny him, the social position he holds in his classroom assumes vital importance to his personality. A few studies relating the sociometric status of the child with various other variables have been done. Rao *et al.* have reviewed one study by Rajput (1970) which compares the personality of stars and isolates among primary school children. A few other studies are reviewed here. Bajpeyi (1971) studies sociometric status of high school students in relation to intelligence and interest and reports significant relationship between these variables. Pathak (1971) studies sociometric status and adjustment level in school children and reports superior adjustment level of populars. Upmanyu (1974) studies sociometric status and anxiety among secondary school children and reports negative correlation between the variables. The personality traits and sociometric choice in a secondary classroom is studied by Mishra (1981). The study reveals that adjusted subjects tend to choose and reciprocate adjusted counterparts. Chandratre's (1982) concern is self-image in relation to sociometric status and he reports a significant difference in self-image among populars, re-

jectees and neglectees. Chauhan (1982) traces the sociometric correlates of self-concept and reports that there is no relation between them. Madhosh (1982) studies the personality correlates of sociometric status in different interpersonal situations. One study, though not a sociometric one, is also related to the child's standing in the class group. Kumar (1980) studies leadership traits as perceived by peers among secondary school girls.

#### Miscellaneous

There are a few other personality variables like anxiety, risk-taking behaviour, frustration and self-concept which also have received some research attention. Most of these studies are the ones which attempt to establish relationship with personality and other variables.

Rao *et al.* have reviewed one study on anxiety, fear and aggression (Jalka, 1963). Adaval (1973) studies conformity behaviour in relation to anxiety and reports high level of anxiety related to conformity behaviour. Patel (1979) investigates anxiety among secondary school students of Sabarkantha district of Gujarat. Personality correlates of audience anxiety are studied by Singh (1979). Bharathi (1980) studies the antecedent and consequent behavioural correlates of anxiety among elementary school children. Prasad and Gothwal (1980) relates job awareness to anxiety. Singh (1980) traces the personality variables and demographic correlates of anxiety among college students. Anxiety, the study reveals, is related positively to ergic tension, need abasement and nurturance and negatively related to ego strength and temperamental thretic, having no relation with intelligence.

Krishna (1973) traces the antecedents and personality correlates of risk-taking behaviour. Singh (1979) studies the effect of cognitive dissonance on risk-taking behaviour in relation to certain personality variables among undergraduate boys. Arora (1981) does a psychological study of personality patterns of risk-takers and non-risk-takers.

Rao *et al.* in their trend report have cited three studies on frustration (Pareek, 1958; Mathur, 1970; Sharma, 1973). Muthayya (1960) studies aspiration and reaction to frustration among adolescents. Malviya (1968) studies reactions to frustration among rural and urban male and female adults. Mithal (1975) studies the frustrated and non-frustrated students' reaction to different life situations. Basavanna (1971) studies self-confidence as an attribute of self-concept. Sharma (1978) compares the self-concept of 12 high and low achievement and in-

telligence groups of students of urban secondary schools. Dutta (1979) studies the effect of malnourishment on self-concept. Uchat (1979) studies the self-concept of pre-university students enrolled in different disciplines. Ramkumar (1979) studies the subject characteristics of adolescent girls with acute self-concept. Tara (1980) studies self-concept in relation to aspiration, interest and SES among pre-adolescents. Manav (1981) studies self-concept in relation to achievement among professional and non-professional college students.

A study worth mention here is by Khan (1980) on the psychological factors of tension in college-going youth. Uncertainty about employment, value confusions, attitude patterns, inadequate communication with teachers, etc., are reported to have caused tension.

Prasad (1965) studies the fatigue of school children and finds negative relationships between fatigue and scholastic achievement, adjustment, etc. Lakadawala (1979) traces the variables underlying lack of interest in study in school children.

Cognitive complexity among college students is studied as a function of their personality factors by Ram (1981). The study reveals relationship between cognitive complexity, and certain background variables like sex, discipline, type of college, cognitive style and various personality variables.

An analysis of the 226 studies reported in this chapter shows that quite a number of disciplines other than pure education have also been included. The largest representation is of Ph.D. studies in psychology (120); in fact, they outnumber the Ph.D. studies in Education (80) which means that for every two studies in Education, there are three psychological studies. The rest (26) is an assortment of Ph.D. studies in various subjects (Sociology 2, Science 1, Home Science 2, Physical Education 2), financed or supported studies (11) and studies whose status is not identifiable (8).

This broad analysis of studies included here leads us to some interesting and perhaps revealing observations:

1. Within the field of learning, motivation and personality quite a lot of work is being done in disciplines other than pure education. So far, the largest concentration of work embracing these areas is done in psychology, but the trend indicates that other disciplines are also seriously tackling these areas. While on the one hand this shows how important this subject is, it also strongly indicates the current emphasis on inter-disciplinary studies in social sciences.
2. The fact that psychologists are heavily contributing to this area and that this knowledge is be-

neficial to educationists as such also indicates the high reliance which we now tend to place on scientific methodology, experimentation and psychometrics. In fact, this erosion of barriers between education and psychology, at least in some common areas of interest, and consequent utilization of each other's contribution is a welcome sign which only helps to enrich our knowledge in these areas by complementing each other's approach, knowledge and methods.

3. A glance through the various aspects of this area covered shows an overwhelming interest in various situations, processes and determinants, which affect the learning behaviour. Not only this, it also shows a strong awareness about recognizing pupils' capabilities as growing and talented individuals. This ultimately helps to provide better opportunities of placement by exploring their talent, gifts of adjustment patterns.

4. It is true that the approaches of psychology as a behavioural science and education and several other disciplines in social science differ significantly. The interest of psychology is more in exploration of the processes which lead to or determine behaviours in different situations and under different conditions. However, the interest of psychologists is also in the application of the findings to various situations and this strongly overlaps the practical and helping approach of education and other social sciences. It is this complementation in studying a variety of situations and identifying various processes that helps our knowledge to grow and also helps the learning child or youth. This chapter certainly indicates this growth.

Having made these general observations, we will now consider some conceptual and methodological issues which are evident in the studies included in this chapter. What is the emergent picture of the interactions among the various forces in the social-psychological field of education? Have any of the problems that characterize this area been solved or do they at least, show signs of unanimity? Have there been generalizations that subsume the many wants and relationships that have hitherto been considered isolated and uncomprehended? Has there been any consensus or at least a fairly common agreement about the adoption of any particular theoretical system which explains the many problematic situations that have been left unexplained? These are some crucial questions we ask ourselves in order to evolve an impressionistic picture of the work done in this area after reviewing the research studies re-

ported here. The answer we got was not encouraging; the picture is rather disturbing. Looking at the number of studies, one expected an understanding about the phenomena covered in this area, but the evidence presented is so complex and confusing that no clear picture emerges. Of course, in a developing social science, as ours, it is difficult to find unambiguous conclusions but we certainly expect a maturity in the research efforts that have or are being made with an equal, if not more, emphasis on quality along with quantity.

One feature of research in this area, when viewed in an evolutionary perspective, is that the growth has been rather horizontal and not vertical as one would expect it to be. The research enterprise in this area seems to be uncoordinated and non-cumulative. It appears as if this knowledge generated by one study is not influencing the hypotheses formulated by the subsequent ones. Thus, whatever understanding is developed through research in this area is not composite and integrated, rather it is fragmented and loosely studied with many isolated findings. The growth has been rather horizontal, that is, the major concern seems more to encompass new and newer variables and examine their relationships in diads or triads in all possible combinations rather than building up a coordinated and growing super-structure based on earlier researches. This added to the fact that the research environment and its parameters as also the sample of subjects studied are different every time making any collation and attempts at drawing conclusive trends rather difficult.

The fundamental problem seems to be that research in this area is not yet paradigmatic<sup>1</sup>. There is no agreement among researchers in this field, as probably is the case with psychologists in general about the fundamental facts, their meaning and their placement in the context of the entire field. The very coexistence of different schools of psychology conflicting with each other is an evidence to this. Because of this *serious* research studies (emphasis deliberate) done in psychology are affiliated to one school or the other, but they explicate their theoretical position right at the outset. But this is not the case with the research studies reviewed here.

Most of the studies here, however, show no evidence of a conscious effort at explicating their theoretical stands. In fact, there seems to have been no serious attempt to evolve theoretical frameworks and discuss the

<sup>1</sup>This refers to the concept of paradigm and paradigm-based normal research propounded by Kuhn. (Kuhn, T.S., *The Structure of Scientific Revolution* (2nd ed.), University of Chicago Press, Chicago, 1970)



hypotheses in their context. Thus, the enterprise of research in this area has been lacking in a common concern as well as focus. The problems identified, the questions asked, the hypotheses formulated and the methodology adopted do not have a common frame of reference and, hence they prove to be intangible to any generalization.

Besides a lack of fundamental theoretical position or a conceptual framework, we also see an evidence of investigations for the sake of investigations without having any apparent relevance to either the purpose or the theory in question. An example is a study of relationship between conservation of mass, weight and volume and scientific creativity (Shukla, 1980). It may always be possible to find a relationship of some kind but what we must see is that whether it leads to certain understanding of relevant forces. The above study, for example, though it may not be psychometrically erroneous, does not seem to enrich our understanding of the real determinants of scientific creativity. While we expect, as said elsewhere, that there would be a fundamental difference of approach between an educational study and a psychological study, we also feel that a more purposive study, with the consideration for theoretical and conceptual framework, and a relevance to the work to be investigated may be helpful.

Most studies on relations between the learner characteristics and the socio-cultural forces do not seem to have a socio-historical frame, nor are the conclusions abstracted from the cross-cultural perspective. Social stratification and culture are not unidimensional variables. The use of various measuring tools in this area such as socio-economic status scales may not be mechanically done but must be complemented by a study of existing social and cultural patterns viewed in appropriate historical perspective. Unfortunately, many of the studies reported here show a lack of this understanding. It is also observed in more than one instance during the review and also mentioned earlier, that there is a lack of conclusive evidences regarding specific sets of relationships due to the equivocal nature of research findings. While this is quite understandable in a growing science, it would be desirable, however, if some serious attempts at meta-analysis could be undertaken to explore possibilities of collating the different findings. However, one would expect a more detailed documentation for this purpose; the limited, though extensive, information gathered through abstracts such as the ones in this volume will not perhaps suffice.

The studies reviewed here also indicate a lack of purposive relationship between the investigation topics and the real field problems in education; rather a prime con-

cern of the studies often looks like a pure academic exercise of articulating the constructs and concepts invented. While it is understandable in studies in psychology and other disciplines, it seems exceptionable for education, where the primary concern should be a reference to the educational field. Even those variables seemingly related to education have been taken up for study mostly because of such considerations as: (1) variables X and Y have been studied; Y and Z also have been studied; but as X and Z have not been studied, a study of X and Z is also needed, or (2) the relationship between two particular variables has been studied among sample A, its replication now to sample B is necessary. Most researches in this area seem to be oblivious of the field and its problems and do not seem to address themselves to the problems of educational practitioners or, say, those sections of the society which have been denied the educational opportunities.

Let us now also consider the question of population studied. The vast majority of studies have been conducted on a sample of students drawn from formal educational institutions. Most of these institutions are secondary schools. Our hunch here is that most of these schools are urban or semi-urban though the abstracts do not completely illuminate us regarding this aspect. If this is so, these choices seem to be grounded on non-academic, convenient and pragmatic considerations. School students are selected because they easily form available samples. Secondary school students seem to form the most favourite sample, probably because most of the psychological measuring instruments have been constructed for that age group. Nearly no study deals with the personality, motivational and learning problems of those sections of the society for which formal school has not yet been accessible, while that is a significant part of our young population and should have been our prime — or, at least, an important — target. A few doctoral studies in education are found to have very doubtful reference to educational problems. Though achievement motive has been a favourite variable among researcher in education, a study on motivational factors of achievement, affiliation and power as reflected in Gujarati novels (Patel, 1979) does not seem to be having any direct relevance to education. Bali's (1981) study of personality factors of highly creative persons in different fields could be a study in psychology, but its relevance as a study in education is doubtful, unless one consciously draws concrete referents from education, at least, for an indirect linkage with the educational field. What looks more inappropriate is a study on the self-concept of nurses (Dastoor, 1982). Needless to say that a variable

by itself will not assume meaning in education unless it is seen in an educational perspective. One tends to feel that there needs to be a more rigorous imposition of an educational perspective in undertaking research in this area.

An important trend which can be easily seen is that the selection of problem, its treatment and methodology have been predominantly influenced by the measurement theory and behaviouristic approach of psychology. This largely explains the fact why the vast majority of educational studies on learner characteristics have used standardized psychological measurement devices. Several of the research studies in learning are in the behaviourist perspective where retention, reinforcement, paired, associate learning, etc., are the components.

We do not decry measurement; it has its own value and it is our debt to psychologists that they have given us a technique and a methodology to measure psychological traits through performance or behaviour manifestations. However, what we want to emphasize is that measurement by itself has its own limitations; it only measures a part of manifest behaviour and may not be confused with the holistic approach. The technique has to be supplemented by experimental and qualitative appraisal methods to give us an assessment of the individual as a whole. What happens is that the measurement technique has become more or less a mechanical operation, at least in the way it is practised now in most of the researches though, in fact, the field of psychometry is also fast expanding and touching new horizons. The majority of our educational researches do not show a grasp of this development, not even awareness.

Moreover, the whole measurement research system as reflected in the studies under review is a closed enterprise; one begins with a definition, operationalizes the definition, translates the operational components into measuring situations, standardizes these through routine operations and constructs the test. Any two or more researches which are related are useful only if they agree on initial definitions of concepts and speak in the same universe. Usefulness of scientific conclusions based on various apparently related studies will be limited to the extent this disparity in defining concepts or stating the premises is taken into consideration. An instance is the large number of studies relating intelligence to creativity. While we do not expect a complete agreement on the results obtained in various studies done under different conditions it seems to us that there is a disparity in the initial operational or assumed definitions of the concepts involved, viz. creativity and intelligence,

and just basing conclusions on them without taking into consideration this source of error may distort the totality of the picture which emerges. Creativity and intelligence both are functional concepts and what they connote is highly dependent on the type of instruments used to elicit or measure these.

As an alternative or even a complement to measurement, nobody seems to have taken up qualitative techniques of studying the learner characteristics and environment. Clinical interviews, ethnomethodological studies, and other phenomenological approaches have not been tried. Only Siddamma (1979) reports to have used phenomenological measure of self-other descriptions. However, no other detail is available from the abstract about this. The few studies with a Piagetian theoretical framework reviewed here also have mostly not adopted the typically Piagetian methodology of clinical interviews with performance tasks.

As was said earlier, the behaviourists' and psychologists' experimental influence has been tremendous in research on learning. Several studies are on typically experimental psychological questions. What one has to recognize is that an instructional situation is a complex one and the understanding one develops out of these smaller controlled experiments would not summate to give the total picture. Studies in actual classroom conditions with least controls are thus imperative.

Some studies reported as experimental studies do not appear to be educationally significant as there are no experimental inputs or interventions. (Anantha-krishnan, 1980; Bhandari, 1981, etc.) They are more an analysis of relationships using sophisticated statistical designs where a few variables are taken to be independent and a few others dependent, mostly employing the analysis of variance. However, as these are experimental studies in psychology, they have their own value in enhancing our understanding of the crucial relationships. A few studies, it is observed, reflect very poor understanding of the conceptual structure of the area, as is evidenced by the type of hypotheses they tend to test and the designs they adopt such as the study on the effect of physical achievement on intelligence (Alegaokar, 1981) or on creativity in relation to anxiety in male and female teacher trainees (Jayaswal, 1977). Two of the findings of the latter study are: (1) the high and low creative groups do not differ significantly on their anxiety score and (2) the high and low anxiety groups do not differ significantly on creativity score. This shows that in the same study the anxiety is first hypothesized as dependent on creativity and then creativity is hypothesized as dependent on anxiety! This means that the formulation of

hypothesis has no theoretical grounding. Adoption of a research design and a statistical technique of analysis, unless properly based on sound theoretical framework, does not give any meaning to research. Such instances in research prompt us to raise questions regarding the effectiveness of evaluation of research. Scrutiny of Ph.D. research as well as other projects needs to be tightened right from the stage of problem formulation.

Many studies are found to have used statistical techniques like product moment correlation, factor analysis, tests of significance of mean difference, etc. Several such studies are found to have ignored the basic assumptions demanded by these techniques. The tendency has mostly been to take diads of variables and establish their relation. This atomistic approach is not enough. Multivariate techniques like multiple regression, canonical correlation, etc., could be profitably employed. For studying the complex network of interactions among the social and psychological variables, analytical techniques involving structural models of inter-causal relationships like path analysis may be used.

In studies on development we see that most of them are multi-cross-sectional. We agree that longitudinal studies are difficult to undertake; however, multi-cross-sectional studies cannot substitute longitudinal ones. Studies with a longitudinal perspective or research design are definitely called for.

There have been, however, a few new influences also in this area. One welcome trend is the growing number of studies based on cognitive school of learning. Piaget's influence is already being felt. Only one tends to feel that the spirit of Piagetian research is not internalized unless his methodology also is taken up. What one finds today is that Piaget has been assimilated into the measurement tradition. Other methodological influences, such as phenomenological, are yet to make their impact on research studies in this area.

An area of study, which seems to have been either neglected or overlooked, is the study of cultural influences in learning. Learning is a part of the communication process which has teaching as its counterpart at the other end. Cultural communication is, of late, attracting much attention. Some such problems are: How are cultural concepts or values, such as religion, transmitted or expressed or communicated? What is the role of sym-

bolism in learning? In fact, a lot is learnt through symbols and non-verbal communication: How culture can be used to design educational system? What are the influences of the developing technology on educational methods? How can the media be utilized to develop effective methods of communication?

It is, however, encouraging that, with the lack of resources and environmental constraints as they are, the studies do show some encouraging research. Many of them have trodden new fields while many others have shown an awareness of newer problems, and new explorations. It is true that most of the studies are replicative, or just pure academic exercises without an eye to their purposive value but this is the case with most studies everywhere. What is important is that an awareness is there and we have persons to cope with new problems. However, there are limitations also which with the lack of enthusiasm in teachers, may be partly responsible for this lack-lustre performance. Research is largely determined in India by the interest and capability of the supervisors and the student has only a limited field to manoeuvre. It seems to us that there is no dearth of talent in this country and no lack of serious researchers to take up challenging problems. What is disturbing, however, is that there is a lack of supportive climate and proper encouragement, which results in the researcher not finding himself a full sharer in the research effort. This frustrates him.

Most new traditions in research in this area have come from the United States or the United Kingdom. The Indian researcher in this area is usually found ready to join any Anglo-American bandwagon. Many research programmes, based on conceptual systems evolved in the West, have been indiscriminately taken up here. One should appreciate that every society or culture has its own unique character and problems. And, except certain basic socio-historical theory systems, one cannot impose any set of concepts evolved in one society to understand and explain problems in another society. The Indian society, the Indian psyche and the problems of Indian education are all unique phenomena which need a lot of sensitivity and little more commitment on the part of the researcher to understand. And, what he seems to be lacking most are precisely these qualities.

**ABSTRACTS: 394-619**

**394. ABROL, D.N.,** *A Study of Achievement Motivation in Relation to Intelligence, Vocational Interests, Achievement, Sex and Socio-economic Status*, Ph.D. Edu., Del. U., 1977

The hypotheses were: (i) Achievement motivation and intelligence are positively correlated. (ii) Achievement motivation is higher among students whose parents belong to higher income group than among those whose parents belong to lower income groups. (iii) Achievement motivation is higher among students whose fathers or mothers have fifteen or more than fifteen years of schooling than among those whose fathers or mothers have four or less than four years of schooling. (iv) Achievement motivation is higher among students whose fathers belong to professional group of occupations than among those whose fathers belong to clerical, or petty shopkeepers group or to unskilled workers group. (v) Achievement motivation scores do not differ in the case of boys or girls. (vi) Achievement motivation is higher among those students who have more of vocational interest maturity. (vii) Achievement motivation and scholastic achievement are correlated, positively. (viii) Students belonging to different types of schools differ on their achievement motivation scores. (ix) Achievement motivation scores on projective-type tests do not correlate high with the corresponding scores on questionnaire-type tests. (x) Fear of failure is found more in students whose parents belong to lower income groups. (xi) Relationship between achievement motivation (n-Ach) and achievement value or hope of success v-Ach(HS) is not significant in the case of boys. (xii) Relationship between n Ach and v Ach (HS) is not significant in the case of girls.

The total sample consisted of 414 students of Class X from six higher secondary schools from the urban area of Delhi. Of these, three schools were aided, one was unaided and two were government schools. Three schools were for boys and three were for girls. The variables studied were achievement motivation, achievement value (both HS and FF), intelligence, sex, scholastic achievement, vocational interest maturity and three components of socio-economic status, viz., educational level of fathers and mothers, income level of parents and occupational level of fathers and schools. The tools used were Achievement Motivation Test (Mehta), Sentence

Completion Test (Mukherjee) for achievement value, Vocational Interest Record (Singh) and Standard Progressive Matrices. Scholastic achievement scores were obtained from the school records. The major statistical techniques used were product moment correlation analysis of variance, t-test and regression analysis with intelligence as the independent variable and scholastic achievement as the dependent variable.

The major findings were: (i) The mean n-Ach of students from unaided, aided and government schools differed significantly. (ii) In the total sample the mean n-Ach of boys was significantly greater than that of girls. But for the two schools (one boys and one girls)run by the same management and in the same locality, the mean n-Ach did not differ significantly. (iii) The achievement value derived from the SCT did not classify the students into two groups which were different in achievement motivation. (iv) The socio-economic status of the family affected the level of achievement motivation, i.e., the higher the status, the higher was the motivation. (v) The socio-economic status of the school significantly affected the v-Ach (HS) of its students. (vi) The students belonging to unaided and aided schools indicated a greater v-Ach (HS) than the students belonging to government schools. (vii) Boys scored significantly higher than girls in v-Ach (HS). (viii) The mean v-Ach (HS) was related to the socio-economic status of students. (ix) v-Ach (HS) and v-Ach (FF) were negatively correlated. (x) A significant and positive correlation of moderate value was found between achievement motivation and intelligence. (xi) The socio-economic status of students affected correlation coefficients between these two variables. (xii) A significant and positive correlation of moderate value was found between achievement motivation and scholastic achievement. (xiii) The socio-economic status affected the correlation coefficients between these two variables. (xiv) A significant and positive correlation of low value was found between achievement motivation and value achievement (HS). Contrarily, achievement motivation and value achievement (FF) were significantly and negatively correlated. (xv) A significant and positive correlation of low value was found between intelligence and v-Ach (HS). On the other hand, intelligence was negatively correlated to value achievement (FF) again with a low value. (xvi) Value achievement and scholastic achievement were positively related. However, achievement was negatively related with v-Ach (FF). (xvii) Vocational interest maturity and v-Ach (HS) were positively correlated.

395. ACHAMAMBA, B., *Cognitive Efficiency, Personality and Perceptions of Time*, Ph.D. Psy., SVU, 1979

The main purpose of the investigation was to find out whether cognitive efficiency and personality were related to perceptions of time.

The study was carried out in two stages, a pilot study with thirty women college students and the final study involving 300 women students in the age range of 17 to 19 years. Cognitive efficiency was measured on the Rational Learning Test. The Internal-External Locus of Control (I.E. Scale) developed by Rotter was used to measure personality factors. The four temporal perspective inventories used in the study to measure the past, present and future time perspectives were the Experimental Inventory, Money Game, Duration Inventory and Circles Test. Analysis of the data was made computing product moment correlation coefficients.

The major findings of the study were: (i) The high, middle and low cognitive efficiency groups (CE groups) did not differ significantly in so far as the total and logical errors were concerned on any of the six factors, namely, duration experience factor, future hour-day year factor, future dominance factor, past hour-day factor, near-distant future factor and distant-near past factor. (ii) When perspective errors were taken into consideration, the means of the three CE groups, high, middle and low, differed significantly on the near-distant future factor. (iii) The means of the three CE groups, high, middle and low differed significantly on the distant-near past factor. The high CE group scored higher than the middle and low CE groups. (iv) When the middle and the low CE groups were compared, the middle CE group perceived the extension of the near past and distant past as greater than the low CE group. (v) The perception of time profiles of the three CE groups based on total and logical errors did not differ in form. (vi) The perception of time profiles of the three CE groups, high, middle and low, based on perspective errors differed in form. (vii) The high externally oriented group was consistently less involved with predicting or planning their future. (viii) The perceptions of time profiles of high, middle and low externally oriented groups differed in form.

396. ADAVAL, S., *A Study of Conformity Behaviour as related to Anxiety and Other Personality Variables*, Ph.D. Psy., All. U., 1973

The objective of the investigation was to study the re-

lationship of conformity behaviour with nine personality factors — anxiety, intelligence, conservatism, conventionality, confidence, dominance, group-dependency, ego-strength and shyness.

The sample consisted of 100 undergraduate arts students of Allahabad University—50 boys and 50 girls. The mood judgement test and form judgement test were developed on the lines suggested by Asch along with the picture conformity test. The scores in the three tests were added to yield a pooled conformity score. Scores on mood judgement and form judgement tests were combined to yield a behavioural measure of conformity and scores on picture conformity test were taken as an attitudinal measure of conformity behaviour. The anxiety level was measured with the help of Sinha Anxiety Scale. For measuring intelligence, conservatism, conventionality, confidence, dominance, group-dependency, ego-strength and shyness, Hindi adaptation of 16 PF Questionnaire by Jalota and Kapoor was used. Product-moment correlations between conformity and each personality variable were calculated.

The findings were: (i) High level of anxiety, lack of confidence, submissiveness, group-dependency and low ego-strength were correlated with conformity behaviour. (ii) Low conformity subjects were confident, dominant, self-sufficient and possessed high ego-strength and a low level of anxiety. (iii) Conformity was not significantly correlated with intelligence, conservatism, conventionality and shyness, separately. (iv) Females were found to be more conforming than males and gave equal indication of two different aspects of conformity behaviour—behavioural and attitudinal.

397. AGRAWAL, S., *A Study of Creativity as a Function of Self-esteem, Risk-taking and Home Background*, Ph.D. Edu., Agra U., 1982

The objectives of the investigation were: (i) to study how far self-esteem was related to creativity, (ii) to study the effect of variation in self-esteem over creativity, (iii) to find out the relationship between risk-taking and creativity, monetary risk-taking and creativity, social risk-taking and creativity, ethical risk-taking and creativity and physical risk-taking and creativity, (iv) to study the effect of variation in risk-taking on creativity in its various ramifications, (v) to study the extent of relationship between creativity and home background, (vi) to study the effect of variation in home background on creativity, (vii) to study the interaction effect of risk-taking behaviour and self-esteem on creativity, (viii) to

study the interaction effect of risk-taking (with its various ramifications) and home background on creativity, (ix) to study the interaction effect of self-esteem and home background on creativity, (x) to study the interaction effect of risk-taking, self-esteem and home background on creativity, (xi) to establish regression equation between creativity as criterion and risk-taking and its various ramifications, self-esteem and home background as predictors and, (xii) to study multiple correlation between creativity and the set of its predictors.

The study was conducted on the graduate students of Agra University. The sample comprised 200 male and 200 female students of undergraduate classes of Agra University. Almost all the students belonged to the age of 17 to 20 years. The tools used were Creativity Test, Risk-taking Questionnaire, Self-rating Questionnaire, Situational Dilemma Questionnaire, personality inventory on self-esteem, and tools for measuring home background.

The study gave the following conclusions: (i) Risk-taking, more or less, was found to be a positive and significant factor in fostering creativity of both the sexes. (ii) Self-esteem was found to be a significant factor to promote creativity, specially in the case of boys. In the case of girls its impact was not very powerful. (iii) Socio-economic conditions of the home played no role or very insignificant role in fostering creativity of both the sexes. (iv) In all the designs, parental acceptance was found to be a very significant and positive factor in the development of creativity of both the sexes. (v) Parental rejection was found to be a negative and demoting factor in creative development specially in the case of boys. In the case of girls its effect was not observable. (vi) Except social risk-taking, other types of risk-taking and self-esteem did not interact with each other to affect creativity. (vii) Risk-taking and socio-economic conditions did not interact to influence creativity. (viii) Risk-taking with its various ramifications did not interact with parental acceptance and rejection to influence creativity. (ix) Self-esteem and socio-economic conditions did not interact with each other to affect creativity of either sex. (x) Self-esteem and parental acceptance did not interact to influence creativity of either boys or girls. (xi) Self-esteem and parental rejection did not interact significantly to influence creativity. (xii) The three factors (risk-taking, self-esteem, and home background) did not interact with one another to influence creativity. (xiii) There existed a significant multiple correlation between creativity and its predictors, i.e., self-esteem, risk-taking and home background. (xiv) Risk-taking and paren-

tal acceptance were found to be more important predictors of creativity than self-esteem and socio-economic conditions.

**398. AGRAWAL, T.D., *Some Psycho-Social Correlates of Affiliation Motive*, Ph.D. Psy., RSU, 1980**

The main purpose of the study was to find out the effect of personality traits, anxiety level, age, sex and birth order on the affiliation motive of students.

The sample of the study was drawn mainly from two age groups of students, i.e., adolescents (13 to 16 years old) and adults (21 to 25 years old). Four hundred cases from each age group were drawn randomly representing an equal number of males and females. In order to analyse the effect of age on affiliation, two more age groups were also included in the study. These consisted of fifty subjects of the childhood stage (8 to 10 years) and fifty subjects of pre-retirement stage (55 to 60 years). Data were collected by employing the AAPAS Motive Test (Kureshi), the Hindi adaptation of the HSPQ (Kapoor and Mehrotra), the 16 PF Test (Hindi adaptation of Kapoor), Sinha's Anxiety Scale, and the Hindi adaptation of the Cattell and Scheier's Anxiety Scale Questionnaire (Kapoor). The data were analysed by computing the mean SD, t-test, chi-square and the product moment coefficient of correlation.

The findings of the study were: (i) First-born subjects showed greater need for affiliation than the later borns. (ii) Although a consistent increase in affiliation motive from the lowest to the highest age group was observed, there existed no significant difference between the subjects of different age groups. (iii) Sex had no effect on the affiliation motive of subjects. (iv) As regards the relationship between the various personality traits and the affiliation motive, none of the correlations for the adolescent group (males and females) was found to be significant; in the case of male adolescents factors D and F showed significantly positive correlation with affiliation motive whereas for female adolescents, O factor of personality was negatively correlated with affiliation motive. Adult males showed a significantly positive relationship between affiliation motive and factor H of personality whereas in the case of adult females, factor B of personality showed a highly positive correlation with affiliation motive but personality factors L and Q<sub>2</sub> were negatively correlated. (v) Adolescents with two poles of personality traits did not differ significantly in their affiliation motive. The subjects with low H trait of personality showed high affiliation and the subjects with high H

trait showed low affiliation. Females with low C and high I personality traits showed low affiliation. (vi) Considerably higher number of male adult subjects with low H and low O traits of personality possessed high affiliation motive. Among the adult females, a greater number of less intelligent persons (low B trait of personality) possessed lower degree of affiliation and a greater number of highly intelligent persons possessed high affiliation.

A large number of persons with low C trait of personality were found to be highly affiliative and a greater number of high C trait persons tended to have low affiliation. (vii) Significantly positive correlations were obtained between anxiety and affiliation among female adolescents and male and female adults but not among male adolescents.

399. AHMED, S., *Effect of Socio-cultural Disadvantages on Creative Thinking*, Dept. of Edu., I.T. College, Lucknow, 1980

The major aim of the investigation was to study the impact of socio-cultural disadvantage on the development of verbal and non-verbal creative thinking. The question for which answer was sought was whether those coming from disadvantaged home environment derived more benefit from advantaged schools than those coming from rich home environment.

The tools used for data collection were Sahu's Scale of Cultural Deprivation, an indexing device constructed by the investigator to determine the advantaged/disadvantaged status of the schools and Verbal and Non-Verbal Tests of Creative Thinking by Baqer Mehdi. The sample comprised 150 students of Classes VIII, IX and XI from five schools—one extremely advantaged school (EAS), one slightly advantaged school (SAS), one average school (AVS), one slightly disadvantaged school (SDS), one extremely disadvantaged school (EDS). Seventy-five students equally distributed between the three classes and the five schools were extremely disadvantaged and 75 were extremely advantaged. A  $2 \times 3 \times 5$  factorial design was used for the study.

The major findings were: (i) Irrespective of the type of school and the class, the mean scores of the disadvantaged home children on both verbal and non-verbal tests of creativity were apparently lower than the mean scores obtained by children from advantaged home background. (ii) Irrespective of the home background and class, only the students from the EAS yielded the highest mean score while the rest of the schools did not show any gradual rise or fall in the mean score values

with respect to the schools being characterized in terms of the status of being disadvantaged. (iii) Irrespective of the type of school and the type of home background, the mean score values obtained by the students increased from Class VIII to Class XI. This was true for both the advantaged and the disadvantaged subjects. (iv) The mean scores of the subjects on the verbal and non-verbal scores increased as the schools became characterized with respect to the status of being more advantaged. (v) The scores on verbal and non-verbal tests of creative thinking were found to be significantly determined by all the three factors, viz., the class, home background and type of school.

400. AJWANI, J.K., *Problem-solving Behaviour in relation to Personality, Intelligence and Age*, Ph.D. Psy., RSU, 1979

The objectives of the study were: (i) to find out the effect of personality, intelligence, age, sex and their interactions on the problem-solving behaviour of students, and (ii) to investigate the directions intended to assist the individual to bring about any improvement in the problem-solving ability.

The study was completed in two phases. In the first phase, the relationship between the problem-solving ability and the different variables was worked out and in the second phase the effect of directions on the problem-solving ability of the subjects was studied. The sample of the first phase consisted of 2,400 subjects, representing three age groups, i.e., 10-11 years, 14-16 years and 19-23 years. Of these, the subjects scoring in the top 12.5 per cent and the bottom 12.5 per cent on factors B, C, I, O and  $Q_4$  of the personality tests were considered for the second phase—the experimental phase of the study. The tools used in the study were the sixteen personality factor questionnaire, the HSPQ, the CPQ, and the Culture Fair Test, Scales 2 and 3. In order to measure the problem-solving behaviour of the subjects, four puzzles were selected. Of these, two were geometrical puzzles and two were mechanical. The two geometrical puzzles were the Square Puzzle and the Match Stick Puzzle (the learning puzzles) while the two mechanical puzzles were the Ring Puzzle and the Leaf and String Puzzle (the experimental puzzles). Following a randomized-control group design at the experimental phase, three experimental groups and one control group with equal representation of different age groups under different experimental conditions were formed based upon the Klauseier's principles of improving the problem-solving ability. The sub-

jects of experimental group I were helped in stating and delimiting the problem with the help of specific direction; in the experimental group II, the subjects were helped in finding out the methods of solution; and the subjects of experimental group III were presented the learning puzzles before the experimental puzzles. No specific direction was given to the subjects of control group. The average time taken by the subjects of all the four treatment groups was recorded. The data were analysed by applying the t-test and the analysis of variance.

The findings of the study were: (i) The subjects with facilitatory personality traits proved better problem-solvers than those having inhibitory personality traits. (ii) The subjects with high intelligence proved to be better problem-solvers than those with low intelligence. (iii) The problem-solving ability of the subjects increased with an increase in age. (iv) No significant sex differences were observed in the subjects' ability to solve problems. (v) The interaction between personality factors, intelligence, age and sex had no effect on the problem-solving ability of subjects. (vi) The subjects of the three experimental groups performed significantly better than the control group, implying that the directions helped in increasing the problem-solving ability of the subjects. (vii) The assistance given in finding out the needed information and methods (experimental condition II) proved to be the most effective set followed by the experimental condition III and experimental condition I. (viii) The effect of direction of the problem-solving ability was found to be independent of other factors, that is, facilitatory or inhibitory personality, high or low levels of intelligence, young or old age and male or female sex.

**401. ALEGAOKAR, P.M.,** *Effect of Physical Achievement on Intelligence*, Ph.D. Edu., Poona U., 1981

The major objective of the study was to find out the effect of physical achievement on intelligence. Physical achievement included the components of running, pull-ups, jumping and ball throw.

The sample consisted of 444 students in the age range thirteen to sixteen years selected from three districts on the basis of stratified random sampling technique. The data consisted of measures of age, height and weight and measures of intelligence and physical achievement. The tools used were the tests to measure power, strength, agility and flexibility and Oak's Intelligence Test. The t-test and the F-test were used to test the significance of

differences between the scores on various measures.

The major findings were: (i) High-achievers in physical achievement had higher IQ than low-achievers. This was true for the students of 13, 14, 15 and 16 years of age. (ii) There was no significant difference between the IQ of high- and low-achievers in running for all age groups taken together and also for each age group taken separately. (iii) High-achievers in pull-ups had higher IQ than low-achievers in all age groups taken together and separately. (iv) The high-achievers in jump and reach, as well as those in long jump and ball throw had higher IQ than low-achievers of all age groups taken together and separately.

**402. AMIN, N.,** *A Study of Relationship between Spatial Egocentrism and Conservation of Length and Area in Delhi School Children*, Ph.D. Edu., JMI, 1982

The objectives of the study were to find out the relationship between (i) spatial egocentrism and conservation of length, (ii) spatial egocentrism and conservation of area, (iii) intelligence and conservation of length, (iv) intelligence and conservation of area, (v) intelligence and spatial egocentrism, and (vi) conservation of length and conservation of area.

Thirty-seven schools out of seventy-five municipal corporation primary boys' schools of the south zone of Delhi were selected randomly. From each of the thirty-seven schools, about 50 per cent of the students between the age range 5 to 10 were selected. The sample thus comprised 307 children. The tools used in the study were Flavell's Task IC for measuring spatial egocentrism, Coloured Progressive Matrices and two tools for assessing conservation of length and conservation of area developed by the researcher. The tools developed by the researcher had ten tasks each. These tasks were taken from Piaget's experiments. To analyse the data, product moment correlation, contingency coefficients and test of linearity of regression were used.

The findings of the study were: (i) Perceptual role-taking was highly and positively correlated with conservation of length and conservation of area (perceptual role-taking was considered inversely related with spatial egocentrism). (ii) Intelligence was moderately but positively correlated to conservation of length and conservation of area. (iii) There was negative but moderate correlation between intelligence and spatial egocentrism. (iv) Conservation of length and conservation of area were positively and highly related to each other.



403. ANANTHAKRISHNAN, P., *An Experimental Study Relating Concept Formation to Various Professional and Non-professional Courses among Men Students*, Madras U., 1980

The study attempted to find out the relationship existing among various academic disciplines with respect to concept attainment score. In order to examine the relationship, the following hypotheses were formulated: (i) Significant mean differences in concept attainment scores would be observed among various academic disciplines. (ii) Academic disciplines with mathematical bias would differ in mean concept attainment scores from academic disciplines which have no mathematical bias. (iii) Significant differences in mean concept attainment scores would be observed between professional and non-professional courses.

The sample comprised 100 male students drawn at random from the postgraduate college of the S.V. University and professional colleges such as engineering, medical, law and agriculture. A concept formation test developed by Conant and Trabasso was used. Analysis of variance and the t-test were used to analyse the data.

The major findings were: (i) There were significant differences between various academic disciplines in the concept attainment scores. (ii) There was specific difference between mathematics and statistics and non-mathematical subjects like social science. (iii) The mean difference between engineering and medical and law courses was not at all significant. (iv) The mean difference in concept attainment scores between medical and law and agriculture was not significant whereas the mean difference between engineering and agriculture courses was significant. (v) Engineering, medical and law as academic disciplines at the professional level involved formation of concepts almost to the same level. (vi) Subjects like mathematics, statistics and engineering stood out on a different plane where concept formation largely determined their structure as against other subjects where the level of concept formation was at a lower level. (vii) There was a positive relationship between some subjects—mathematics, statistics and engineering, and concept attainment. (viii) Professional and non-professional groups differed with respect to concept attainment scores.

404. ARORA, P.N., *A Psychological Study of Personality Patterns of Risk-and Non-risk-takers of Kumaun Region*, Ph.D. Psy., Kum.U., 1981

The objectives of the study were: (i) to trace the per-

sonality patterns of the risk- and non-risk-takers, (ii) to find out the relation of risk-taking tendency with the extent of self-disclosure of the individual, (iii) to find out the effect of social and economic status of the individual having risk-taking behaviour, (iv) to know whether there is significant age difference with regard to the extent of risk-taking tendency, and (v) to trace the effect of willingness/unwillingness in job selection on risk attitude.

A sample of 1,000 subjects was selected by the random cluster sampling technique. After the data were collected from the entire sample on the criterion of Q technique the sample was categorized into two groups—risk takers (RT) and non-risk-takers (NRT) on the basis of age groups and professions. Data were collected on the Self-Disclosure Inventory, Risk-taking Questionnaire and the Hindi version of the 16 PF Questionnaire. Critical ratio test, analysis of variance, biserial coefficient of correlation and Kolmogorov-Smirnov extension of median test were used to analyse the data.

The main findings of the study were: (i) There were significant differences in the global personality patterns of risk-takers and non-risk-takers. (ii) Extroversion was positively related with the risk-taking tendency of the individual. (iii) Abstract and insightful thinking were inversely proportionate to the risk-taking behaviour. (iv) Risk-takers possessed a dominating personality in society. (v) Non-risk-takers were more serious, introvert and prudent. (vi) Positive relationship between risk-taking tendency and super-ego strength was identified. (vii) Shyness was negatively correlated with risk-taking. (viii) Tender-mindedness was positively and highly correlated with the risk-taking tendency. (ix) The risk-takers seemed to be suspicious by nature. (x) Practicability in life was directly proportionate to the risk-taking behaviour. (xi) Shrewdness in behaviour and the risk-taking tendency were positively related. (xii) The inter-relationship between placidity/apprehensiveness and risk-taking showed that the two were not correlated. (xiii) The NRT personality was conservative. (xiv) The RT liked their own ways of activity management. (xv) The RT showed a strong control on emotions. (xvi) Mental tension and risk-taking behaviour were found to be highly correlated. (xvii) The NRT were orthodox and stereotyped. (xviii) The target figure-wise self-disclosures of the RT and the NRT differed significantly, the RT had higher self-disclosure comparatively. (xix) The self-disclosure extents of the RT towards brother, sister and friends were significantly higher than those of the NRT. (xx) Casteism did not play a significant role in risk-taking. (xxi) Socio-economic status did not lead to a

difference in the level of risk-taking tendency. (xxii) There was no significant age variation in the risk-taking tendency. (xxiii) The correlation between willingness/unwillingness in risk job selection and the level of risk-taking tendency was significant.

**405. ARORA, S.R.,** *A Study of Sibling Relationships and Their Psychological and Educational Implications*, Ph.D. Edu., Del. U., 1981

The objectives of the investigation were: (i) to describe the nature of sibling relationships in several settings characteristic of the sibling population, (ii) to indicate the selected factors expected to be related to the cordiality continuum of sibling relationships, and (iii) to examine the relationship of sibling cordiality in its tripartite setting — age, sex and birth order — to scholastic achievement.

The study was confined to siblings having same parents and to the dyad relationship; only nuclear families with two or more children were included, the subject siblings were from an age group of 12-18 years in Classes VI to XII. A sample of 160 immediate order and younger siblings was selected from a group of senior secondary and secondary government schools of South Delhi. Data on the cordiality of behaviour and the attitude of each sibling, income, profession, social life, culture and education of the family, total number of members of the family and their scholastic success were obtained on a prepared questionnaire. The data were analysed using the product moment correlation, t-test, chi-square test and analysis of variance.

The findings were: (i) There was no difference in the subgroups defined on the basis of age, sex and birth order, however, the interaction of the three factors using the means of cordiality scores under different subgroups indicated that the elder brothers had the least favourable attitude toward the younger siblings whereas the younger brothers showed highest regard for their elder brothers. No such difference in the mutual relationships of younger and older sisters was observed. (ii) Age difference contributed towards difference in mutual adjustment among siblings, a large difference was more favourable to cordiality. (iii) The cultural status, the educational level and the socio-economic status of the family had no significant impact on inter-sibling behaviour except in a few cases. (iv) Correlation between scholastic success of siblings and sibling cordiality score of younger sibling with scholastic success of older sibling was highest when compared with that of

older sibling with scholastic success of younger siblings. (v) As the number of siblings increased in a family their cordiality decreased except when the number was a large one, say, six.

**406. ARYA, S.C.,** *A Study of Growth of Scientific Concepts among Elementary School Children*, Ph.D. Edu., Bhopal. U., 1981

The objectives of the investigation were: (i) to develop concept-related criterion tasks on the concepts of weight, volume, classification and associative linking to study the growth and development of these concepts, (ii) to study the level of growth of conservation of mass and volume with regard to the variables of age and sex, (iii) to diagnose the nature of errors the students commit in responding to these tasks and to cluster them in a theoretical frame, (iv) to study changes, cross-sectionally, as they occur in the level of attainment of the scientific concepts with and without regard to sex, (v) to study, cross-sectionally, the nature and growth of classification and associative linking in elementary school children, with and without regard to their sex, and (vi) to diagnose the nature of confusions which the children display in dealing with classificatory problems and to cluster them in a theoretical frame.

The study was carried out on 200 students, twenty boys and twenty girls from each of the age levels 6+, 7+, 8+, 9+, and 10+ years. These 200 students were selected randomly from 360 students who came from average socio-economic background and were of average intelligence. The sample was selected from three schools which were under the same management and admitted children of employees drawn from all over India. Two Piagetian-type tasks were developed for conservation of mass and conservation of volume; similarly, tasks were developed to study associative linking. Besides, Standard Progressive Matrices Test, Mill Hill Vocabulary Scale and school records were used to collect data. The data were analysed by computing mean, SD, coefficients of correlation, and t-tests.

The study revealed: (i) A sudden fall in the value of proportion of correct responses occurred from the age 8+ to 9+; however, errors indicated no definite points of confusions but only misconceptions in the development of the concept of conservation of mass. (ii) In the second stage, misconception of weight due to flattening or thinning came in, and further in the third stage of dissolving the ball the concept of conservation of mass shifted from the age cohort 8+ to 10+. (iii) In the case of conserva-

tion of volume, 25 per cent at 6+ to 62.5 per cent at 10+ age group conserved the concept but only a small percentage of students could attain the criterion of acceptability. (iv) In associative linking, the frequency of perceptible mode of characterization enhanced from +7 to 8+ and then showed a fall from 8+ to 9+ and a consistent downward trend thereafter. (v) The schools were found to have a definite impact upon the development of these modes of characterization. (vi) The children were found to attain resemblance sorting and consistent sorting by the age 6+, exhaustive sorting, and some and all by the age 7+, and multiple class membership and conservation of class hierarchy by the age 9+

**407.** ASHA, C.B., *An Empirical Study of the Adjustment Patterns of Creative Children in Secondary Schools*, Ph.D. Psy., Ker. U., 1978

The study attempted to find out whether: (i) highly creative children differed significantly from their less creative peers in different areas of adjustment such as home, health, social and school adjustments, (ii) highly creative children differed significantly from their less creative peers in adjustment to the problems stemming from the situation in which they found themselves, and (iii) whether better-adjusted children differed from their maladjusted peers in creative performance.

A test of creative thinking abilities, an adjustment inventory, a school adjustment inventory and personal adjustment inventory were the tools used in the study. The sample comprised 1,100 students of Standard X drawn from twenty-four high schools in Trivandrum district in Kerala, giving proportional representation to the sex and location and the type of school. The sample was trichotomized into creative, moderate and low-creative groups within boys and girls for comparison of adjustment in the seven areas for the first stage of analysis. The second stage of analysis was concerned with special problems of adjustment of creative children in relation to their special characteristics such as originality, curiosity, independence of thought and action, liking for novels and unconventional ideas.

The main findings were: (i) None of the groups classified on the basis of creativity showed significant difference in health, social and school adjustment areas, for the boys and girls. (ii) The three creative groups among the boys showed significant differences in emotional adjustment. (iii) Only two sub-groups (high and moderately creative groups) of boys showed significant differences in home adjustment. (iv) Although boys and girls

differed significantly in adjustment to situations that are assumed to create problems for creative children, the six sub-groups classified on the basis of creativity showed no significant differences. (v) The better-adjusted and maladjusted groups within each area of adjustment differed only in certain tasks of creativity, and these tasks differed for each area of adjustment. (vi) When classified on the basis of problems concerning personality characteristics of creative children, the better-adjusted and the maladjusted groups of boys differed in one task of creativity (similarities) and the moderately adjusted and maladjusted girls differed on one task (pattern meaning).

**408.** AURORA, S., *A Comparative Study of Personality Factors of Deviant and Non-deviant Higher Secondary School-going Boys*, Ph.D. Psy., Agra U., 1980

The major objectives of the study were: (i) to inquire into the personality of deviant and non-deviant children, and (ii) to find out the personality factors that differentiated a deviant from a non-deviant. The sample comprised 800 students selected on a random basis from nine institutions. The main tool used was Cattell's 16 P.F. Questionnaire.

The major findings were: (i) Non-deviants possessed a comparatively better integrated personality. Their self-sentiment attainment was good; ego and super-ego were strong. They exhibited social boldness, emotional detachment, a fulsome emotional expression. They were radical, submissive and desurgent and were realistic in dealings. (ii) The withdrawing deviants resorted to flights but not to flights in their dealings. Emotionality was typically at the dry level; ego, super-ego and the self-sentiment were anaemic. Intelligence remained retarded in adjustive functions. The conservative withdrawing deviants were typically sensitive to threats and possessed social insecurity. Intensity of subjectivity usually filled in their romantic preferences though emotionality kept itself at the dry level. They were found to have ergic tensions. (iii) Expectation evasion deviants suffered from dryness of emotionality. Their level of intelligence for matters of adjustment remained of a lower order. Self-sentiment, ego and super-ego showed stunted growth and non-effective integration. The tradition tolerant expectation evasion deviants though forthright also showed social insecurity and sensitivity to social threats. They remained typically dominant and guilt-prone. The level of ergic tension remained high.

They remained desurgent like non-deviants. (iv) The rebellious deviants remained ill-equipped with the vital referents of personality. Such deviants were typically associated with the lowest level of intelligence, comparatively. Social insecurity loomed large over them. Intensity of guilt-proneness, high ergic tension and internal subjectivity were not so marked. In comparison with the withdrawing deviants, rebellious deviants exhibited much more social insecurity but less ergic tension.

**409. AZIZ, P.F.,** *A Study of Generalization in Verbal Learning in Relation to Variation in Stimulus Characteristics*, Ph.D. Psy., AMU, 1977

The objective of the investigation was to study generalization in verbal learning in relation to variation in different types of verbal materials — phonemically similar, synonymous, antonymous, conceptional and syntactical.

Four experiments were designed to study generalization for (i) phonemically similar vs. semantically similar items, (ii) synonyms vs. antonyms, (iii) concrete vs. abstract concepts, and (iv) whole sentence to one of its components with a different grammatical construction. Appropriate lists of items for learning and testing generalization were prepared for each experiment. Verbal generalization was measured in terms of total number of responses learnt in relation to associated syllables/words/sentences of the learning list elicited by the syllables/words/word components of the corresponding generalization test list. The sample of the study consisted of 600 female undergraduate students randomly assigned to different experimental treatments. Analysis of variance and the t-test were used to compare the differences between the mean scores of different groups.

The main findings of the study were: (i) Generalization decreased with decrease in the similarity between the test items and the original learning items. (ii) Generalization under the conditions of intentional learning was greater than that under conditions of incidental learning. (iii) Phonemically similar items were more amenable to generalization than semantically similar items. (iv) Synonyms were more amenable to generalization than antonyms. (v) Abstract concepts were more generalizable to their defining attributes than concrete concepts to their specific instances. (vi) In assertive and interrogative forms of syntactical structure the generalizability of the whole sentence to the verb component was greater than that to the other two word components. (vii) In optative and exclamatory forms of

syntactical structures the generalizability of the whole sentence to the subject component was greater than that to the other two word components. (viii) In imperative forms of syntactical structure the generalizability of the whole sentence to the object components was greater than that to the other two word components.

**410. BADAMI, C.H.,** *A Study of Some Aspects of Motor Development among Pre-school Children*, Ph.D. Psy., Guj. U., 1974

The main objectives of the investigation were: (i) to study the apparent normal development in motor behaviour during the pre-school age, and (ii) to guide parents, teachers and others with respect to the motor development of the child.

The normative-descriptive approach, using cross-sectional sampling design, was undertaken for the investigation. A total of forty children, with equal number from both the sexes, were selected from age groups 2 to 5½ years. Data were collected by using Gesell Developmental Schedule with respect to locomotor skills and manipulative motor skill. Both qualitative and quantitative data were collected by the researcher. The data were analysed by the t-test.

The major findings of the study were: (i) Locomotor and manipulative motor skills studied here indicated constant development throughout the period. (ii) More variations were observed in the rate of development of the skills with age. (iii) At some age levels, with respect to some skills, the rate of growth was found significantly faster while at others it was found slower and not significant. (iv) In a majority of activities, no systematic sex differences were observed. (v) At certain age levels, sex differences in some items were found significant, while at other age levels they were not significant. (vi) A systematic account of motor development could be used for diagnosis and school placement. (vii) The information obtained could be used for effective organization in selecting various activities for children.

**411. BAJPEYI, S.K.,** *A Study of Sociometric Status (of High School Students) and Its Relation to Intelligence and Interest Pattern*, Ph.D. Psy., Saugar U., 1971

The objective of the research project was to study the sociometric status of the higher secondary students in relation to their intelligence and interest patterns. The

study tested forty-four hypotheses concerning relationships between intelligence and interest pattern and differences on these variables among populars, neglectees and rejectees with special reference to sex.

The study was conducted on 234 students, 78 each of populars (P), neglectees (N) and rejectees (R). Each group of 78 comprised 38 boys (B) and 40 girls (G). Intelligence was measured by Group Test of General Mental Ability (Joshi), interest pattern was measured through Interest Record (Singh) and the sociometric data were collected by using a sociometric questionnaire. Socio-Economic Status Scale (Urban) was also used. Duncan's Range Test was applied to compare the mean scores of the different groups, and correlations were calculated by working out contingency coefficients.

The study revealed: (i) There were significant differences in intelligence between populars and rejectees as well as populars and neglectees, neglected girls (NG) and popular boys (PB), NG and NB, NG and PG, RG and PB, RG and NB, RB and PB, and PG and PB. (ii) Intelligence and sociometric status were significantly correlated at 0.01 level. (iii) There was significant difference in mechanical area of interest between NG and NB, NG and RB, NG and PB, PG and NB, PG and RB, PG and PB, RG and NB, and PB and NB. (iv) In business area of interest, the popular group was significantly different from the rejectee group but not neglectee group; there were significant differences in this area between NB and RB, NB and NG, PB and RB, PB and NG, PG and RB, PG and NG and RG and RB. (v) In scientific interest, populars and neglectees had a significant edge over the rejectees and the difference was significant between RG and NB, RG and PB, NG and NB, NG and PB, RB and NB, and PG and NB. (vi) In aesthetic interest, significant differences were found between NB and PG, NB and NG, NB and RG, NB and RB, PB and PG, PB and NG, PB and RG, and RB and PG. (vii) In social interest area, significant differences were there between neglectees and populars and NB and PG. (viii) In clerical area, significant differences were not found between any two groups or subgroups. (ix) In outdoor interest area significant differences were there between RB and NB and RB and RG; in all other combinations the differences were not significant. (x) The popular boys (PB) had significantly greater interest in scientific and social fields; popular girls (PG) had more interest in scientific, social and aesthetic fields; neglectee boys (NB) were most interested in scientific area and the next was social area; the neglectee girls (NG) liked social, aesthetic and scientific areas; the rejectee boys (RB)

preferred scientific area, and rejectee girls (RG) preferred social, aesthetic and scientific areas. (xi) Populars had significantly higher socio-economic status than the neglectees and the rejectees.

412. BALI, S.S., *Study of Common Personality Factors of Highly Creative Persons in Different Fields*, Ph.D. Edu., Kur. U., 1981

The major aim of the study was to investigate common personality factors of highly creative persons in different fields, viz., poetry, painting, science and music.

The sample consisted of 20 persons who had been rewarded or recognized in their fields. They were administered Cattell's 16 P.F. Test, Form A. Their scores on 16 P.F. in terms of O and C and also trait-wise constituted the basic data of the study. Q-technique of factor analysis was used to analyse the data. Factor extraction was carried by Thurstone's centroid method and six factors emerged which were further orthogonally rotated. The six factors were identified as Emotionality, Sensitivity, Ego-ideal, Emotional Introversion, Creative Mood and Social Will. Longitudinal interpretations of factor matrix revealed: (i) poets possessed factors like emotional sensitivity, creative mood and social will, (ii) painters' profiles consisted of factors like emotional sensitivity and creative mood, (iii) scientists' profiles consisted of common factors of ego-ideal, emotional introversion and social will and (iv) musicians' profile showed factors of ego-ideal and social will.

413. BANERJEE, D., *Attitudes and Other Personality Traits of Unemployed and Employed Undergraduates: a Cooperative Study*, D. Phil. Psy., Cal. U., 1963

The major objective of the investigation was to compare two groups of persons, one employed and the other unemployed, who were otherwise similar in background, certain attitudes and personality traits.

Four attitude scales corresponding to government, morality, religion and society were constructed following the Likert technique of summated rating. Item analysis was done on the data obtained from 200 randomly selected adults, both males and females. Reliability and face validity of the scales were determined. Chi-square test was applied to test the normalcy of distribution of the summated scores (on each scale). Two groups, experimental and control, were formed and

matched as far as possible on sex, age, educational level and socio-economic status. The experimental group included 200 Bengali-speaking registered male undergraduate unemployed individuals of Calcutta having ages ranging from less than 16 to more than 32 years. The control group consisted of 200 male undergraduate employed individuals drawn mainly from clerical workers employed in various offices. Eight hypotheses were statistically tested with the help of the above mentioned four attitude scales (in Bengali) together with the Bengali version of the Bernreuter Personality Inventory (short form).

The findings of the study were: (i) The unemployed were significantly less neurotic, more self-sufficient, less introverted and more dominant than the employed. (ii) The attitude of the unemployed towards the existing government was relatively less favourable than that of the employed, but the case was just the reverse regarding the attitude towards society. (iii) The Chi-square test indicated the normalcy of distribution of the summated scores (on each scale).

**414. BANOO, S.,** *Sex Differences in Parental Press at Several Socio-Economic Levels*, Ph.D. Edu., Jammu U., 1982

The study was conducted to know the parental involvement and their contribution to the education of the child. The specific aims of this investigation were: (i) to isolate the areas of parental press and prepare a parental press inventory, (ii) to make a comparative study of the scores of boys and girls in the selected areas of parental press, (iii) to make a comparative study of the scores of boys and girls belonging to rural and urban localities of high and low socio-economic status, (iv) to evolve a scientific and an objective criterion for assessing academic achievement (dependent variable), (v) to determine the degree of relationship between selected areas of parental press (independent variable) and academic achievement (dependent variable) of both boys and girls selected for the study, (vi) to study the degree of relationship of parental press scores with academic achievement after nullifying the effect of socio-economic status and intelligence, (vii) to study the effect of sex, locality and socio-economic status on parental press scores, and (viii) to find out the constituents which dominate parental press of boys and girls.

The investigator prepared parental press inventory, socio-economic status questionnaire, achievement test in English, achievement test in general knowledge,

achievement test in arithmetic. For the analysis of data the statistical techniques used were critical ratio, product moment correlation, partial correlation, three-way analysis of variance, Aitkin's Method of Pivotal Condensation and multiple regression and Thurstone's Centroid method of factor analysis and orthogonal rotation.

The major findings of the study were: (i) The distribution of scores of boys and girls in all the five areas (educational, social, emotional, physical and moral) of parental press showed a lack of symmetry. (ii) The girls secured better points in educational and physical areas whereas boys exhibited better scores in the emotional and moral areas. (iii) Urban boys belonging to high SES secured better points in educational, social, emotional and moral areas than urban girls of high SES. (iv) Rural boys belonging to low SES secured better points in educational, social and emotional areas than their counterparts of high SES. (v) Rural boys and girls of high SES showed no significant differences in educational, social, emotional and moral areas except in physical area. (vi) Rural boys belonging to low SES exhibited significantly higher points than their counterparts in high SES in emotional and moral areas. (vii) Significant relationship was observed between the parental press and academic achievement scores after nullifying the effect of socio-economic status and intelligence. (viii) Sex, locality and SES did not affect the parental press scores. (ix) The emotional, educational and moral areas of parental press appeared to make major contribution in the prediction of academic achievement of boys whereas in the case of girls, moral, social and educational areas of parental press seemed to contribute much in the prediction of academic achievement. (x) For both the groups moral press played a dominating role among the five areas of parental press.

**415. BARLINGE, M.K.,** *A Study of Influence of Mother's Personality on Child's Personality*, Ph.D. Psy., Nag. U., 1977

The investigation was aimed at studying the relationship between certain personality characteristics of mothers and those of their children.

Of the twenty-six variables selected for the study of mothers, sixteen were the personality dimensions of Cattell and ten were different child-rearing practices followed by mothers. For children, twelve variables were comprehensive personality dimensions corresponding closely to those of mothers, ten related to children's perception of mother's child-rearing behaviour and four

were common reaction tendencies observed in children. The tools used were the Indian adaptation of the 16 PF Questionnaire, Child Rearing Practices Schedule, Child's Personality Questionnaire (CPQ) (Cattell), a specially prepared questionnaire to tap the perceptions of children of their mother's child-rearing behaviour and child's Reaction Tendencies Inventory. The sample consisted of 370 students studying in Class VIII of twenty local schools. They were in the age range of ten to twelve years. The testing of children was done in groups, in the schools. Mothers of the children had to be tested individually. As the distributions of scores on all the variables were found to be near-normal, parametric statistics were used for analysing results. Factor analysis of 26×26 correlation matrices for mothers and 26×26 matrices for children gave a small number of meaningful variables for interpretation. The Chi-square test gave a measure of association between the mothers' personality characteristics and those of their children. The t-test was used to make comparisons of the standing of children and mothers on various variables.

The comparison of mothers' factor scores and children's original scores revealed: (i) Children of emotionally balanced mothers tended to be less hostile than those of mothers making emotional balance. (ii) Children of duly involved mothers appeared to be less hostile than those of unduly involved mothers. (iii) Children of prudent mothers were less negativistic and less hostile to parents than those of least prudent mothers. (iv) Children of sanguine mothers appeared to be relaxed whereas those of less sanguine mothers tended to be tense. (v) Children of anxiously possessive mothers tended to be tense, negativistic and hostile towards parents. (vi) Mothers of children with high undesirable reaction tendencies tended to be uncontrolled, neglectful, rejectant, indulgent, dependence-encouraging and strict. (vii) Two of the four reaction tendencies under study, viz., negativism and hostility to parents, were always found in children if their mothers had an unhealthy personality and if they followed undesirable child-rearing practices. It was concluded that actual child-rearing practices followed by mothers were more important than the personality traits possessed by them.

**416.** BASAVANNA, M., *A Study of Self-confidence as an Attribute of Self-concept*, Ph.D. Psy., SVU, 1971

The aim of the investigation was to study self-confidence as an attribute of self-concept. The problem posed

for the study was whether people who perceived themselves as having high degree of self-confidence differed from those who perceived themselves as lacking in self-confidence in regard to certain aspects of their behaviour and experience.

An inventory developed for the purpose of measuring self-confidence was standardized by using traditional psychometric procedures on a group of 300 college students. The S-C Inventory was later administered to 800 male students studying in various classes and courses in the constituent colleges of Sri Venkateswara University from whom three samples of twenty-five each were randomly drawn from various levels of score distribution to represent high, moderate and low levels of self-confidence, respectively. All the seventy-five subjects belonging to the three samples were individually tested to obtain a measure of their risk-taking behaviour, a measure of their intellectual level, a measure of their level of aspiration and a measure of their speed of conflict resolution. Further, they were given a Q-sort test individually under four instructional sets to obtain a self-sort, an ideal self-sort, and other person sort and an ideal other person sort.

The findings of the study were: (i) Persons who perceived themselves as having high self-confidence had higher general mental ability than those who perceived themselves as lacking in self-confidence. (ii) Persons with high self-confidence were capable of taking fairly higher risk in predicting the outcome of their performance in an intellectual activity than those who lacked self-confidence. (iii) Persons with high self-confidence had higher self-regard than those who lacked self-confidence. (iv) There were no significant differences between the persons with high and low self-confidence in their level of aspiration behaviour. (v) The groups with high and low confidence did not differ significantly with regard to their speed of conflict resolution. (vi) The people with high and low confidence did not differ significantly with respect to their regard for others.

**417.** BEDI, H.S., *Aspirations of Adolescents as Related to Socio-economic Status, Intelligence and Sex*, Ph.D. Edu., Pan. U., 1982

The major hypotheses of the study were: (i) socio-economic status (SES) had no significant correlation with aspirations of adolescents, (ii) intelligence had no significant correlation with the aspirations of adolescents, and (iii) sex did not affect the aspirations of adolescents, significantly.

The study was conducted on 750 male and female adolescents of Chandigarh, chosen at random from six schools of different categories. The tools used for collecting data were Group Test of General Mental Ability by Jalota; Dev Mohan Socio-Economic Status Scale (Revised), Aspiration Scale for Education, Personal and Social Aspirations developed by the investigator, and Occupational Aspiration Blank developed by the investigator. The statistical techniques used for analysing the data were significance of differences between correlations, chi-square and factor analysis.

The major findings of the study were: (i) Educational and occupational aspirations of adolescents were significantly correlated with intelligence. The variables of sex and place of residence did not affect the relationship between intelligence and educational aspirations. (ii) Correlation between intelligence and occupational aspirations differed significantly in respect of sex and place of residence. (iii) Intelligence, place of residence, and sex did not have significant bearing upon social aspirations. (iv) Intelligence and place of residence had no effect on personal aspirations, whereas sex affected the same. (v) Socio-economic status had significant relationship with adolescents' educational, personal and occupational aspirations, but in the case of social aspirations, SES had no effect. (vi) Groups on the basis of sex and place of residence did not show significant differences in their social aspirations in relation to the variables of social status. (vii) Economic status did not affect differently the social aspirations of urban and rural males. (viii) Place of residence and sex had significant interaction with social status; therefore, urban males and females and rural males and females had different social aspirations in relation to social status. (ix) Among urban males, the factor of expectancy contributed significantly towards educational, personal and social aspirations. Occupational aspirations were affected by the factor of awareness. The factor of prestige did not affect any kind of aspirations. (x) Among urban female adolescents, the factor of expectancy affected personal and social aspirations while the factor of awareness influenced the educational aspirations. Occupational aspirations were affected by the factor of occupational awareness and the factor of prestige did not affect any kind of aspirations. (xi) Among rural male subjects, the factor of prestige inversely affected the personal and social aspirations, but positively affected the occupational aspirations. The factor of expectancy did not affect any aspirations. The factor of educational awareness affected the educational aspirations, and occupational awareness contributed to occupational aspirations. (xii) Among rural female ado-

lescents, the factor of prestige determined the educational and personal aspirations. The factor of expectancy boosted the occupational aspirations and lowered educational and social aspirations. The factor of educational awareness affected educational aspirations inversely, but the factor of occupational awareness affected educational, personal and social aspirations.

**418.** BHAGAVATHY, G.P.K., *Analytical Study of the Personality, Intelligence, Values and Problems of Adolescent Girls*, Ph.D. Edu., Ker. U., 1977

The aim of the investigation was to study the personality patterns and adjustment problems of adolescent girls with special emphasis on deviant groups — high achievers, low achievers, problem girls and girls who excelled in cocurricular activities. The main hypotheses of the study were: (i) There would be significant differences between the different groups studied with regard to the personality variables of introversion extroversion and neuroticism, intelligence, total number of problems as well as number of problems expressed in the specific areas of health, family, personality, social, educational, vocational, financial, fears, religious and moral, boy-girl relationship and recreational and materialism-spiritualism orientation. (ii) Certain variables such as socio-economic status, parental education, the level of aspiration and discrepancy between achievement and aspiration when studied in relation to the differences exhibited, if any, would help to gain an understanding of deviant behaviour.

The tools used in the study were the Maudsley Personality Inventory (Malayalam version), Mathew's Test of Mental Abilities (Verbal and Numerical), problem check-list, Materialism Spiritualism Scale and personal data blank. The tests were administered on a sample of 183 high achievers, 184 low achievers, 150 problem girls, 143 cocurricular high achievers and 217 normal girls, drawn from Standard X and pre-degree classes in the age range of 14–17. Urban-rural differences were maintained at all stages of analysis. Two-way analysis of variance for unequal groups was done, followed by t-tests and chi-square test, wherever applicable.

The major findings of the study were: (i) Significant differences were seen in the personality variables and intelligence (both verbal and non-verbal) between the four deviant and one normal group studied. (ii) The five groups could be differentiated on the number and nature of problems in the areas of health, family, personality, social, educational-vocational, financial, fears, religion



and morals, boy-girl relationship, recreational and materialism-spiritualism orientation. (iii) The five groups also exhibited differences in the environmental and motivational variables studied.

- 419.** BHAN, R.N., *Deterioration in Interest as a Function of Insecure Mental Health during and after the Period of Certain Academic Specialization*, Ph.D. Psy., Kur. U., 1972

The major objectives of the study were: (i) to verify if deterioration in interest is a function of insecure mental health among students studying in M.A./M.Sc. or students who had passed M.A./M.Sc., (ii) to find out the factors related to insecurity among students studying for M.A./M.Sc. or who have passed M.A./M.Sc., (iii) to find out how far rejection, isolation and anxiety were the basic factors related to insecurity, and (iv) to compare the case histories of secure persons with those of insecure persons.

The sample was drawn from students studying for M.A. or M.Sc. and from the persons who settled down in life after passing M.A./M.Sc. In all 1,300 persons formed the sample of the study. This included 800 in-course and 500 after-course persons. These persons were divided into two groups — secure persons and insecure persons. The groups were matched on the variables likely to influence the interests of the subjects, viz. sex, age, subject studied, father's occupation and family income. They were administered the Maslow's Security-Insecurity Inventory, the Ray-Chawdhury Interest Survey, the Rorschach Psychodiagnostic Test and the Non-Directive Interview Schedule. Along with these data, university or college records of the sample were also studied. The data so collected were analysed with the help of t-test.

The findings of the study were: (i) Interest in outdoor and physical activities deteriorated in the case of in-course group due to insecurity of mental health. (ii) Interest in such fields as literary activities, welfare and humanitarian activities, outdoor and physical activities, gregarious and social activities deteriorated in the case of after-course group due to insecurity of mental health. (iii) Interest fields which were not found to deteriorate in the case of in-course group due to insecurity of mental health were scientific interest, literary interest, gregarious interest and domestic interest. (iv) Interest fields which were not found to deteriorate in the case of after-course group due to insecurity of mental health were scientific interest and domestic interest. (v) Security-insec-

urity was a stable characteristic of personality and was caused by long-standing factors which affected from early childhood.

- 420.** BHANDARI, A., *An Experimental Study of Personality, Drive and Age as Determinants of Reminiscence in Children*, Ph.D. Psy., Pan. U., 1981

The major hypotheses of the study were: (i) extraversion was positively related with reminiscence, (ii) neuroticism had a positive relationship with reminiscence, (iii) subjects working under the condition of high-drive would show greater reminiscence than those working under conditions of low-drive, (iv) reminiscence in children would improve with age, and (v) reminiscence scores of boys and girls would differ from each other.

The sample for the study comprised 480 children (240 boys and 240 girls) in the age range 10 to 14 years, selected on the basis of their scores on the Junior Personality Inventory (JPI), from schools of Amritsar and Chandigarh. It was an experimental study and the experiment used two four-day factorial designs. The first design involved two levels of extraversion (high, E<sup>+</sup> and low E<sup>-</sup>) with controlled neuroticism, two levels of drive (high and low) three levels of age (10, 12, 14 years) and two sexes (2×2×3×2=24) yielding 24 conditions with ten subjects in each condition (Extraversion Group). The second design followed the same pattern and this group was called the Neuroticism group. Reminiscence was studied on two psychomotor tasks — substitution and backward figure-writing. The tools used for the experiment were Junior Personality Inventory (JPI) by Mohan, and others, Test of Substitution and Test of Backward Figure Writing.

The main findings of the study were: (i) Extraversion was found to be a significant determiner of reminiscence in backward figure writing. On substitution, it was not found to be a significant determiner, though the means clearly favoured the high on extraversion group. (ii) The subjects working under high-drive conditions showed greater reminiscence than those working under low-drive conditions. In both the tasks, though the F-ratios for drive were insignificant, the means favoured the high-drive group. (iii) Age was not found to be a significant determiner on both the tasks. However, the means revealed that reminiscence improved with age in the substitution task, whereas the pattern was reverse in the case of the backward figure-writing task. (iv) On both the psychomotor tasks, sex was not found to be a significant determiner of reminiscence though the means

were higher for boys. (v) The four-factor interaction of personality ( $E^+$ ,  $E^-$ ), drive, age and sex emerged significant on the substitution task. (vi) Neuroticism was found to be a significant determiner of reminiscence in children. On both the tasks, F-ratios for neuroticism were found to be highly significant. (vii) Subjects working under the high-drive condition were superior to those working under the low-drive condition, this being more prominent in the case of the backward figure-writing task than in the case of the other task. (viii) Age was found to be a significant determiner of reminiscence on the substitution task, with reminiscence increasing with an increase in age. On the backward figure-writing task, age was not a significant determiner, though the means indicated that the ten-year-age groups showed greatest reminiscence, while the twelve-year-old group showed the least. (ix) Sex emerged as a significant determiner of reminiscence on the substitution task with the means clearly favouring girls, whereas on the backward figure-writing task, though the means were higher for girls, the results were not significant. (x) The two-factor interactions of age and sex in substitution, and of personality ( $N^+$ ,  $N^-$ ) and sex in backward figure-writing were found to be significant.

421. BHARATHI, V. V., *Anxiety in Elementary School Children: a Study of Some Selected Antecedent and Consequent Behavioural Correlates*, Ph.D. Home Science, SVU, 1980

The main purpose of the study was to assess, qualitatively and quantitatively, the main and interactional effects of demographic and social class variables, parental attitudes, intra-familial dynamics and structure, on anxiety levels measured by a standard instrument. The demographic variables included age, sex and social class. The intra-family variables included family structure, tension balance between parents and parental attitudes. The consequent behavioural correlates included fears and dreams, speech and language functions.

A sample of 150 children (boys and girls) in the age group of 5 to 7 years was drawn from a population of children in elementary schools of Tirupati for initial studies. The sample was randomly chosen using multistage systematic sampling procedure. The sample for the final study consisted of 300 children (boys and girls) in the age group 5 – 7 years. There were equal number of boys and girls at each level (number  $\times$  sex  $\times$  age :  $50 \times 2 \times 3$ ). Anxiety was measured by CMAS. Social class level was evaluated by using the Socio-Economic Status

Scale (Urban). Family structure and tension between parents were measured by Family Structure Tension Balance Questionnaire and parental attitudes by Parental Attitude Research Instrument (PARI). Dream experiences were evaluated by a dream check list. Speech and language functions were qualitatively and quantitatively studied by using taped samples of speech as primary data obtained in response to a test picture. The data were factor analysed by using principal component analysis and varimax solution and four factors were identified and further used in making comparisons.

The important findings of the study were: (i) Anxiety depended upon the combined influence of both demographic variables and the social class. (ii) Among the several antecedent variables, the type of family structure and tension balance between parents were found to be crucial. (iii) Some parental attitudes were strongly associated with anxiety in children. (iv) The relationship between the dreams and anxiety was not clearly established. (v) High anxiety in children affected the speech functions. (vi) High anxiety affected the quality of language expression in children.

422. BHARGAVA, K., *Self-disclosure as Related to Academic Competence and Personality (with Special Reference to Neurotic and Schizophrenic Personalities)*, Ph.D. Psy., Agra U., 1980

The objective of the study was to know the effect of neurotic and schizophrenic personalities on their academic performances. For the purpose of data collection, tests for sorting out neurotic and schizophrenic personalities and for measuring their academic competence were administered to a sample of about 800 students, both male and female. After discarding incomplete and unreturned forms, 600 forms were finally analysed, 300 of males and 300 of females. Correlation coefficients and t-tests were used for assessing the relationship and difference in different variables.

The analysis of results showed: (i) There was negative correlation between self-disclosure and academic competence. (ii) There was low and negative relationship between neuroticism and self-disclosure. (iii) There was a significant relationship between schizophrenia and self-disclosure. (iv) There was a negative relationship between neuroticism and academic competence. (v) Academic competence and schizophrenic personality had a negative correlation. (vi) Boys and girls differed significantly in self-disclosure. (vii) Boys and girls did not differ in academic competence.

423. BHARGAVA, P., *Reciprocity and Generosity — Some Determinants of Sharing in Children*, Ph.D. Psy., Luc., U., 1978

The purpose of the study was to determine the imitation of sharing behaviour in children as a function of model generosity and vicarious reinforcement. The hypotheses were: (i) Children who observed a very generous model sharing, would share more than those who observed a very stingy model. (ii) Subjects in the generous model and in the stingy model condition would imitate the marble distribution of the model. (iii) Vicarious reinforcement would affect the amount of sharing in generous and stingy model conditions. (iv) Different types of vicarious reinforcement would differentially affect the amount of sharing behaviour. (v) Significant differences on sharing would be revealed as a function of sex.

The subjects for the study were selected from two schools, Manav Bharati Vidya Mandir and Nari Shiksha Niketan, Lucknow. The sample consisting of sixty-four children, (thirty-two males and thirty-two females), ranging in age from five to seven years, was randomly assigned to a generous or a stingy model condition. Half the subjects in each group heard M praise herself, the others did not, and half of each of these groups heard E praise M, and the remaining subjects did not. Eight subjects (four males and four females) were assigned to each condition; each subject was later given an opportunity to share. The M was a 22-year-old female and the E was a 22-year-old female. The sharing was measured in terms of the number of marbles shared. The analysis of variance was used for analysing the data.

The findings were: (i) There was a strong effect of modelled behaviour upon subsequent sharing in children. (ii) Observation of a generous model could accentuate the altruistic behaviour in children. (iii) Children imitated the model's performance because it was likened or identified with their parents', siblings' or others' behaviour at home. (iv) Vicarious reinforcement had no effect even within the experimental conditions. (v) Previous training was more effective than the verbal praise by a stranger given for a short time.

424. BHATIA, T.R., *An Experimental Study of the Effect of Reciprocal Inhibition Therapy on Anxiety in Adolescents*, Ph.D. Edu., Del. U., 1977

The hypotheses of the study were: (i) Reciprocal Inhibition Therapy reduces anxiety considerably and sig-

nificantly. (ii) Reciprocal Inhibition Therapy controls ergic tension and somatic components more than other components of anxiety.

The anxiety scales, i.e., Dutta Personality Inventory and Sen Personality Inventory, were administered to 523 male students of Grade IX and X, randomly selected from three schools of Delhi, keeping in view the convenience of administering the therapy. For relaxation therapy, the researcher developed his own elaborate technique, keeping in view the principle of Reciprocal Inhibition Therapy and the procedure of corpse posture. The subjects were divided into the experimental relaxation group and no-treatment control group. The experimental procedure comprised the following four steps, viz. pre-treatment procedure, behavioural procedure for the management of anxiety or treatment proper, post-treatment procedure, data analysis procedure. The pre-post experimental design was used to conduct the experiment. The statistical procedures used were correlation coefficients among various scores of variables studied, and analysis of variance and Principal Component method of factor analysis.

The major findings were: (i) Anxiety as a whole and each of its nine components were almost normally distributed. The normal distribution of the nine components along with global anxiety indicated indirectly the internal consistency of the inventories used in this study. (ii) In the case of Dutta Personality Inventory, component  $\times$  component correlations ranged from 0.22 to 0.68 and component  $\times$  total correlations ranged from 0.53 to 0.81. In the case of Sen Personality Inventory, component  $\times$  correlations ranged from 0.35 to 0.57 and component  $\times$  total correlations ranged from 0.66 to 0.88. These figures suggested the oneness of the components of the two tests. (iii) The factorial analysis of DPI yielded the three factors which could be named as emotionality, somatic concern, and fear-guilt complex, while that of SPI yielded only one factor which later merged with those of DPI when both the test scores were submitted to factorial analysis. (iv) All the differences between post-treatment experimental and control group means on total anxiety scores and scores on anxiety components were significant at 0.01 level except in the case of guilt proneness of the DPI. Subjects, after the treatment, decreased on total anxiety and each component of anxiety except on guilt proneness. (v) The relaxation therapy maximally helped in the control of emotional instability; it also reduced ergic tension and somatic reactions but not more than other components of anxiety.

425. BHATNAGAR, A., *A Study of Some Factors Affecting Student Involvement in Studies*, Ph.D. Psy., IIT, New Delhi, 1979

The hypotheses of the study were: (i) Certain background variables like sex, birth order, caste, etc., are related to involvement in studies. (ii) Students in high and low involvement groups differ as regards these background variables. (iii) The level of aspiration is related to involvement in studies. (iv) Social desirability is related to involvement in studies. (v) Characteristics preferred by parents are related to involvement in studies. (vi) Fourteen personality factors like sociability, ego-strength, excitability, etc., measured by HSPQ are related to involvement in studies. (vii) High and low involvement groups differ as regards these psychological variables. (viii) Student achievement in school subjects is related to involvement in studies. (ix) Students showing high and low involvement in studies differ as regards their scholastic achievement. (x) High and low involvement students show a significant difference in their intelligence. (xi) Background, psychological and scholastic achievement variables predict student involvement in studies. (xii) High and low involvement groups differ as regards certain background, psychological and scholastic achievement variables in a multivariate combination. (xiii) High and low involvement groups differ as regards satisfaction of ten need areas taken into consideration for the study.

The sample consisted of 600 students, both boys and girls, of Class X studying in fifteen higher secondary schools in Delhi. To test the hypotheses, seven tests, inventories and questionnaires were used to collect data. The study involvement inventory (SII), based on Murry's concept of psychological needs, was developed by the investigator. The ten needs selected for investigation were n-abasement, n-achievement, n-affiliation, n-aggression, n-autonomy, n-difference, n-nurture, n-order, n-recognition and n-succorance. One hundred and eighty open-ended items were prepared on the basis of certain aspects of involvement in studies. The first draft was administered to a group of 240 students of class X of nine schools in Delhi. The content analysis of data thus collected was done and the second draft consisting of seventy-eight selected statements was developed. The draft was then given to thirty-three experts in the field to judge whether a statement indicated the student's involvement in studies or not and to classify each statement in one of the ten need areas. A final selection of forty items was made and a Likert-type scale was prepared.

The major findings were: (i) Girls were more involved in studies than boys. (ii) Non-Scheduled Caste students showed more involvement than Scheduled Caste students. (iii) Students from urban schools showed more involvement than students from rural schools. (iv) Public schools and the Central Schools seemed to provide more need satisfaction than the government and private aided schools. (v) Students with high involvement in studies were outgoing, warm-hearted, easy-going, conscientious, persevering, rule-bound; had stronger super-ego strength; were venturesome, socially precise, self-disciplined and had high self-concept control. However, sex differences were obvious on adventurousness, super-ego strength, self-sufficiency, sensitivity and passive individualism. (vi) Boys having high involvement in studies showed more socially desirable behaviour than girls. Besides, boys belonging to both high and low involvement groups showed higher level of aspiration than girls. (vii) High involvement and low involvement groups did not differ as regards the perception of characteristics preferred by parents. (viii) There was a highly significant relationship between intelligence and involvement in studies. (ix) Background, psychological and scholastic achievement variables contributed to the prediction of involvement in studies. The psychological variables accounted for maximum variance (11.8 per cent), scholastic achievement variables came next (8 per cent) and background variables explained 6 per cent of the variance. Significant predictors of involvement in studies were Hindi, super-ego strength, sociability, self-control, geographical location, SES and sex of student, in that order. (x) A high positive relationship was found between satisfaction of students' various psychological needs and their academic achievement.

426. BHATNAGAR, J.N., *An Investigation into the Values, Aspirations and Personality Traits of Adolescents of Rajasthan*, Ph.D. Edu., Udaipur U., 1979

The objectives of the study were: (i) to investigate the values, aspirations and personality traits of adolescents, and (ii) to compare the values, aspirations and personality traits of adolescents who were student leaders, social conformists and delinquents.

The sample consisted of 200 student leaders, 200 conformists and 200 delinquents studying in fifteen higher secondary schools of Rajasthan. Three groups of adolescents were selected on the basis of their cumulative records and information furnished by the principal, shift incharge and class teachers.

The major findings were: (i) Student leaders and conformists gave highest preference to power value followed by hedonistic and economic values whereas religious, aesthetic, social and knowledge values ranked lowest; delinquents preferred hedonistic value, while power value was given second place. (ii) Most adolescents gave top priority to scientific fields; student leaders and conformists gave second priority to the study of arts subjects whereas delinquents ranked commerce as second choice. (iii) All the adolescents wanted to see their country free from poverty and preferred peace and morality to material prosperity. (iv) All the adolescents aspired for friendship with other nations and for world peace. (v) The overall adjustment of student leaders was significantly better than the adjustment of conformists and delinquents. (vi) Student leaders and conformists had the healthiest attitude towards parents but delinquents did not see their parents as sources of affection and protection. (vii) All adolescents expressed unfavourable attitude towards older generation. (viii) Student leaders had a favourable attitude towards their peers, including girls. (ix) Delinquents expressed fear of failure in examination and lack of interest in studies. (x) Student leaders were more optimistic about their academic future and aspired for achieving high standards.

**427. BHATTACHARYA, A.,** *Diagnosis and Prevention of the Learning Disabilities of Primary School Students in Arithmetic*, Ph.D. Edu., Cal. U., 1982

The objectives of the study were: (i) to diagnose the detailed patterns of disabilities in two areas of arithmetic — common fractions and decimal fractions, and (ii) to try out, experimentally, teaching methods which would prevent development of learning disabilities in these areas. Hypotheses tested were: (i) The experimental groups taught by audio-visual materials and techniques would achieve significantly more than the controlled groups taught by the conventional method. (ii) Learning through audio-visual materials and techniques would cause more prolonged retention than that by the conventional method. (iii) The experimental groups would show more interest in the lesson than the controlled groups.

The investigator developed a diagnostic tool in common fractions, which was administered on 450 students of Class V, and in the case of decimal fractions the sample consisted of 500 students of Class V. The test-retest reliability coefficient of the former tool was 0.91, and that of the latter was 0.89. The tools were validated

against individual structured interviews, and the validity coefficient was found to be 0.95 in either of these areas. The major patterns of disabilities diagnosed were forty-four in the case of common fractions and thirty in the case of decimal fractions. Duplicated method experiments were conducted with Class IV students in four co-educational primary schools. The experimental groups were treated by audio-visual methods and techniques for which eleven teaching units were developed. The control groups were treated by the conventional methods of teaching. Intelligence Test (Kamat) was administered on both the groups before the start of the experiment as a prerequisite for the analysis of covariance. Methods of teaching were made to vary.

The covariance analysis revealed: (i) The first hypothesis was retained on the ground that the experimental groups had achieved significantly more than the controlled groups. (ii) The experimental groups showed better results and prolonged memory of the learned materials than the controlled groups. (iii) Circumstantial evidences suggested the retention of the third hypothesis.

**428. BHATTACHARYA, S.B.,** *Interaction of Personality and Creativity*, Ph.D. Edu., BHU, 1978

The objectives of the study were: (i) to construct and standardize a verbal test of creativity in Hindi, (ii) to measure the interaction of fourteen personality factors of HSPQ and creativity on the achievement of students of Classes IX and XI, (iii) to measure the interaction of thirteen personality factors of HSPQ and creativity on intelligence as measured by factor B of HSPQ of students of Classes IX and XI, (iv) to measure verbal elaboration, comparability, literary quantitative production and to find out their relationships with composite creativity, fluency, flexibility and originality scores, (v) to find out the differences between high, average and low creatives on fourteen personality factor scores and to draw their personality profiles, and (vi) to find out the personality correlates of creativity for those in Classes IX and XI.

The study had been kept open-ended and no a priori hypotheses had been formulated. The sample was drawn on the basis of the incidental purposive sampling technique from secondary and higher secondary schools of Varanasi City. The total sample included 410 male students of Classes IX and XI. Junior-Senior High School personality questionnaire (Hindi version of HSPQ) Group Test of General Mental Ability (Jalota),

Verbal Test of Creative Thinking (Mehdi) and a verbal test of creative thinking developed by the investigator were used for collecting the required data. In addition to descriptive and inferential statistics, two-way analysis of variance with 3×3 design, coefficient of contingency, biserial correlation coefficients, product moment correlation coefficients, profile matching and pattern similarity coefficients were used for analysing the data.

The major findings of the study were: (i) There was no interaction of creativity and the fourteen personality factors of HSPQ on the achievement of students of Classes IX and XI. (ii) Factors C, G, H, Q<sub>4</sub> and creativity interacted to affect the intelligence of those in Classes IX and XI. (iii) Levels of personality factors did not affect intelligence. (iv) Levels of creativity did not affect the intelligence of the students. (v) Levels of any of the fourteen personality factors did not affect the achievement of Class XI pupils. (vi) Verbal elaboration had a significant positive relationship with composite creativity, fluency, flexibility and originality. (vii) Comparability had significant positive relationship with creativity and its two components — flexibility and originality. (viii) Literary quantitative production was significantly and positively related to composite creativity and all its components — fluency, flexibility and originality. (ix) The high creative secondary and higher secondary students were more warm-hearted, more outgoing, more intelligent, less excitable and more adventurous than the low creative secondary students. (x) The low creative secondary students were assertive and aggressive with weaker super-ego strength, whereas the low creative higher secondary students were conforming, dependent, shy, withdrawn and quick in seeing dangers.

**429. BHAYANA, M.**, *A Study of Competition, Cooperation and Need Pattern in relation to Sex, Age and Socio-economic Status*, Ph. D. Psy., Agra U., 1982

The objectives of the investigation were: (i) to study the effect of age on competition and cooperation behaviour, that is, to study the trends for competition and cooperation behaviour on three age levels, namely, 12 to 15 years, 16 to 19 years and 20 to 23 years, (ii) to study the effect of sex on competition and cooperation in all the three age levels, (iii) to study the effect of socio-economic status (high, middle and low) on competition and cooperation behaviour in both the sexes and in the three age groups, (iv) to study the interactional effect of the three variables, sex, age and socio-economic status, on competitive and cooperative behaviour, (v) to study

the difference in fifteen need variables (achievement, difference, order, exhibition, autonomy, affiliation, interception, succorance, dominance, abasement, nurturance, change, endurance, hetero-sexuality, aggression).

For the selection of the subjects of three SES groups (high, middle, low) Socio-Economic Status Scale (Urban) by Kulshrestha was given to a large number of students of different schools and colleges of Agra. Age was determined from the school records and thus 20 male and 20 female subjects of the three SES groups and from the three age groups, 12 to 15 years, 16 to 19 years and 20 to 23 years, were selected for the study. Thus the total sample consisted of 360 subjects. The subjects were then given T.P.P.S. to study their need pattern and, lastly, they had to do an experiment, Prisoner's Dilemma Game. This is a mixed motive game, where the subject can compete or cooperate according to a pay off matrix.

The findings of the study were: (i) Competition increased as a function of age, and cooperation decreased. Females were found to be more competitive than males in all the three age groups. High socio-economic group was the most competitive and low socio-economic group the most cooperative. The results between the individual needs of the two groups indicated that the two groups had different need patterns. (ii) Two clusters of need were found — those which were characteristic of a competitive group and those which were characteristic of a cooperative group. (iii) Need for interception was found to be a feature of both the groups, competitive and cooperative at different age levels.

**430. BHULLAR, J.**, *The Attitude of University Students towards Physical Activity in relation to Academic Performance, Intelligence, Socio-economic Status and Personality Characteristics*, Ph. D. Edu., Pan. U., 1976

The major hypotheses of the study were: (i) None of the sixteen factorially independent personality traits, as measured by Cattell's 16 Personality Factors Questionnaire, correlated significantly with attitude towards physical activity for each subdomain as also for attitude totals. (ii) In bivariate analysis, intelligence and socio-economic status, and attitude towards physical activity did not correlate significantly in respect of each subdomain and all the subdomains, cumulatively. (iii) No significant correlation existed between academic performance of students and attitudes towards physical activity for each subdomain as also for all the subdomains,

cumulatively. (iv) In multivariate analysis the personality traits, intelligence, academic performance, and socio-economic status conjointly contributed to significant variance in respect of attitude towards physical activity.

A sample of 400 students (boys and girls), exposed to university environments for at least a year, was taken from the various teaching departments of Panjab University, Chandigarh, using the random stratification technique. The tools used for collecting data were Physical Activity Aptitude Scale (PAAS) developed by the investigator, on the lines of the scale-product method evolved by Eyesenck and Crown, Group Test of General Mental Ability by Jalota and Tandon and Socio-Economic Status Scale (Form B) by Kuppaswamy. Marks of the previous university examination were recorded and converted into percentages for measuring academic performance. Descriptive statistics such as means, standard deviation, skewness and kurtosis, were worked out for various distributions. Frequency polygons, product moment correlations, multiple correlations, multiple regress equations, and t-ratios were also used in the statistical analysis of the data.

The major findings of the study were: (i) The students who scored high on personality Factor B were highly impressed by such physical activities as reflected graceful movements and had favourable attitude towards physical activity in general. (ii) Subjects with more favourable attitude towards physical activity in relation to the subdomains I, VI, VII (university, catharsis, ascetic) had negative relationship with Factor Q<sub>4</sub> (relaxed/tense) of personality. (iii) Subjects with higher intelligence tended to have more favourable attitude towards physical activity in relation to its place in the university programme, for health and fitness, as an aesthetic experience, and for catharsis. (iv) Students who were academically better tended to possess more favourable attitude towards physical activity as a social experience, for health and fitness, and appreciated participation in activities possessing certain artistic qualities. (v) Socio-economic status significantly correlated with subdomains I, III, IV and V (university, health and fitness, vertigo and aesthetic). (vi) Multiple regression analysis results showed that high intelligence, high academic performance, and the variables of PF 15 and PF 16 tended to be associated with better perception of the impact of physical activity, leading to favourable attitude towards it. (vii) The t-ratio for the variables of intelligence, academic performance, and personality (Factors B and Q<sub>4</sub>) showed that the subjects with favourable and less favourable attitudes differed significantly at 0.01 level.

431. BHUTANI, K., *A Study of the Effect of Some Cognitive and Personality Factors on Attitude Change*, Ph.D. Psy., Jab. U., 1972

The objective of the study was to assess the effect of cognitive consistency, cognitive complexity and personal rigidity on attitude change. The study attempted to test the hypotheses that: (i) cognitively complex or comprehensive samples were more prone to change than cognitively simple or narrow-minded samples, (ii) cognitively simple and narrow-minded samples did not easily take the communication given by the investigator, and (iii) rigid persons were not so prone to change as non-rigid or flexible persons.

The pre-tryout study was conducted on 405 college students (185 boys and 220 girls) in the age range of 17 to 25 years. The sample was selected through the multi-stage cluster sampling. The final study was carried out on 885 students (414 boys and 471 girls) who were not included in the pre-tryout sample. A scale of radicalism — conservatism with items related to social, political, religious and economic issues was prepared to measure cognitive consistency. Cognitive complexity was assessed by using the Rokeach's Narrow-mindedness Scale in which Catholicism, Fascism, Judaism and Protestantism were replaced by Jainism, dictatorship, Hinduism and Islam; and Kelly's Role Construct Reporting Test was also used. Rigidity was measured by a questionnaire developed in Hindi and the attitude towards mixed marriage was measured with an attitude scale developed for the purpose. The study was conducted on a pretest-posttest experimental design. Between the two measures there was a gap of twenty days during which persuasive messages were sent on mixed marriage. The data were analysed using coefficients of correlation.

The major findings were: (i) Those with higher cognitive consistency were less prone to attitude change than those with less cognitive consistency. (ii) Boys were prone to be more consistent than girls. (iii) Samples with higher cognitive complexity were more prone to change than those with less cognitive complexity. (iv) Girls had higher cognitive complexity than boys. (v) There was no significant difference in change in the attitude of cognitively complex boys and girls. (vi) A rigid sample was less prone to change than a non-rigid. (vii) There was a significant difference between the changed scores of flexible boys and girls in favour of girls. (viii) Both the rigid boys and the rigid girls were not in favour of mixed marriage. (ix) A sample with an extreme attitude did not easily change as compared to the less extreme one and the neutral one. (x) Samples with radical ideology were

more favourable to mixed marriage, but they did not change blindly; and girls were found to be more responsive to persuasive communication than boys.

432. BISHT, A.R., *A Study of Stresses in relation to School Climate and Academic Achievement (Age-group 13-17)*, Ph. D. Edu., Kum. U., 1980

The main objectives of the investigation were: (i) to identify the causative factors of stresses, and (ii) to study the academic stress (AS) and institutional stress (IS) of students in reference to three main effective variables, viz., need for academic achievement (NAA), school climate (SC), academic achievement (AA).

The sample consisted of 600 students (300 males and 300 females). In the first two phases of sampling, quota sampling and in the third, random sampling were employed. Five variables, viz., sex, age, socio-economic status, personality trait, and intelligence, were controlled with two techniques. Need for academic achievement, school climate and academic achievement were conceptualised as independent variables and institutional stress and academic stress as dependent variables. Six scales were developed and standardized to measure the need for academic achievement, school climate, institutional stress, academic stress, socio-economic status, and neuroticism. Academic achievement was measured by the last examination marks changed into percentages. Simple and multiple regression analysis were done to predict the dependent variables, to know the accounted variance and to apply F-test. For knowing the relative importance of independent variables in prediction, semi-partial correlations squared and beta weights squared were tested. Sex-wise and age-wise analyses were also undertaken.

The significant results of the study were: (i) All the distributions of the different variables were almost normal. (ii) Mean scores of academic stress and school climate did not differ sex-wise but the male students differed from female students significantly on the need for academic achievement, academic achievement and academic stress. (iii) Age-wise, there was no difference on the mean scores of these variables. (iv) All the three independent variables were positively and significantly correlated. (v) Only school climate and academic achievement were correlated negatively for the female sample though it was not significant. (vi) The need for academic achievement was a significant predictor of institutional stress and academic stress even when the need for academic achievement's correlated variance

with other variables was partialled out. (vii) The need for academic achievement was the second best predictor but for males it was the best predictor. (viii) The school climate was found to be a significant predictor of institutional stress and academic stress and it was also the best predictor except for the male sample. (ix) Although academic achievement predicted institutional stress and academic stress significantly, it ceased to do so when its correlated variance with the need for academic achievement and the school climate was partialled out. (x) The overall results indicated that NAA and SC could predict IS and AS as efficiently as NAA, SC, and AA implying that the variable AA could be dropped without losing predictability. (xi) For the female sample, SC alone functioned as an efficient predictor.

433. BISHT, A.R., *Interactive Effect of School Climate and Need for Academic Achievement on the Academic Stress of Students*, Dept. of Edu., Al-mora Constituent College, Kum. U., 1980

The investigation aimed at studying the interactive effects of the school climate and the need for achievement on the stress of students. The specific objectives were: (i) to examine the effect of high and low satisfying school climate on academic stress and its components — academic frustration, academic conflict, academic pressure and academic anxiety, (ii) to examine the effect of high and low need for academic achievement on academic stress and its four components, and (iii) to study the interactive effects of the two variables on the components of academic stress.

The independent variables were the school climate and the need for academic achievement (N - A Ach). The tools used were School Climate Scale (split-half reliability was 0.77), Need for Academic Achievement Scale (stability coefficient was 0.85) and Scale of Academic Stress. The sample comprised two groups of 120 students each selected from six intermediate colleges (three boys' and three girls') controlled by grade, age, intelligence, stream and economic status. One sample was from schools with high satisfying school-climate and the second sample was from low satisfying school-climate. Analysis of variance, the F-test and the t-test were the statistical techniques used for data analysis.

The major findings were: (i) High n-A Ach and low n-A Ach operating independently did not differ in their effect on academic stress. (ii) Two types of school climates operating in and by themselves did not differ in their effect on academic stress. (iii) The two variables namely



the n-A Ach and the school climate, when allowed to interact, affected the degree of academic stress. (iv) Academic frustration was influenced by the interactive effect of the n-A Ach and the school climate but not influenced by either of them in isolation. (v) Academic conflict was influenced by the n-A Ach but not by the school climate. The interactive effect of the n-A Ach and the school climate was symmetric. (vi) The n-A Ach had an effect on the academic pressure of students but the school climate did not show any specific effect. No interactive effect was found on academic pressure. (vii) Academic anxiety was not affected either by the n-A Ach or by the school climate, but was influenced symmetrically by their interactive effect.

**434.** CHAND, K., *The Child's Conception of Movement — an Empirical Study*, Ph. D. Edu., Pan. U., 1980

The major hypotheses of the study were: (i) Development of the concept of movement in children was a function of age. (ii) Development of the concept of movement in children depended on their level of intelligence. (iii) The social class of the family affected the development of the concept of movement. (iv) Sex differences existed in relation to the development of the concept of movement.

The sample consisted of 240 boys and 240 girls spread equally (twenty boys and twenty girls) over the twelve age groups of one year interval from the age range of 4+ through 15+, and belonged to fifteen schools in Chandigarh and its suburbs. The concept of movement was studied through five Piagetian tasks, namely, alternative directions of travel, order of succession inherent in cyclic movements, the path traversed, composition of displacements, and relative movements. Locally devised apparatus for the Piagetian Tasks, Raven's Standard Progressive Matrices, and Socio-Economic Status Scale by Kuppuswamy were used. The age of the child was taken from school records. The statistical techniques used were t-ratio, product moment correlation, scalogram analysis, and two-way analysis of variance. The hypotheses advanced in the study were first tested task-wise and then for the concept of movement.

The major findings were: (i) The sample, in general, responded poorly to the task relative movements. The subjects did not respond at the level of hypothetico-deductive understanding of the concept of movement even up to the age of 16. (ii) Quality of performance on all the five tasks separately and on the total score of these five

tasks continued to improve across the entire age range. (iii) The findings lent empirical support to the first hypothesis that the development of the concept of movement in children was a function of age. The intra-age group differences in the task development, however, were significant only at the age level 5+ and 7+. (iv) The hypothesis that development of the concept of movement in children depended on their level of intelligence was also not rejected, empirically both on the basis of correlations and the analysis of variance. The results were significant at all age levels except at 6+ and 14+. (v) The sex of the children did not make any significant difference in relation to the concept of movement except around the age of 8 to 9 and 13 to 14.

**435.** CHANDRATRE, R., *A Study of the Self-image of Adolescents in relation to their Sociometric and Socio-economic Status*, Ph.D. Psy, Sag.U., 1982

The main objectives of the study were: (i) to find out the nature and type of self-image in adolescents, (ii) to find out whether there were any sex differences in adolescents' self-image, (iii) to investigate the effect of socio-economic status on adolescents' self-image, (iv) to measure the differences in the self-image of adolescents belonging to high and low socio-economic status groups, (v) to find out the effect of sociometric status on self-image, (vi) to assess the differences in the self-image belonging to star, rejectee and neglectee dimensions of the sociometric status, and (vii) to find out the relationship between socio-economic status and sociometric status. The main hypotheses were: (i) The adolescents' self-image differed significantly in accordance with the socio-economic status. (ii) There was significant difference in the socio-economic status and sociometric status of adolescents having positive and negative self-image. These hypotheses were further detailed into nine hypotheses for testing.

Initially, Sociometric Questionnaire (Jai Prakash) was administered to 1,600 school students of Saugar in the age group fourteen to eighteen years. Out of 1,600, sixty students (thirty boys and thirty girls) were selected in each group of populars (stars), rejectees and neglectees. The socio-economic status and the sociometric status were the independent variables and self-image was the dependent variable. Bronfenbrenn's criteria of classification was used to classify the students into populars, rejectees and neglectees. Socio-economic Status Scale (Urban, Kuppuswamy) and Personality Differential Scale (Agarwal) were used for measuring socio-

economic status and self-image, respectively. The data were analysed by using one-way analysis of variance and t-test.

The study revealed: (i) Populars and rejectees, rejectees and neglectees, and populars and neglectees differed significantly in self-image. (ii) On the four dimensions of self-image, namely, tough-mindedness, conformity, normalcy and tenseness, populars, rejectees and neglectees differed significantly among themselves. (iii) Considering the boys separately, populars differed significantly from both the neglectees and rejectees in self-image, on all the four dimensions separately and also as a whole. (iv) Taken separately for girls, the three groups differed significantly amongst themselves in the four dimensions of self-image as well as on the total self-image scores. (v) There was no significant difference in self-image between popular boys and girls, rejectee boys and girls, but between neglectee boys and girls the difference was significant. (vi) Significant differences were found on tough-mindedness between popular boys and girls, and neglectee boys and neglectee girls, on conformity between neglectee boys and girls; on normalcy and tenseness also, neglectee boys and girls differed; rejectee boys and rejectee girls differed only on tenseness. (vii) Self-image differed among the four grades of socio-economic status. (viii) Boys and girls differed in self-image only in the highest grade of socio-economic status and not in other grades, and the same was the result when the dimensions of self-image were considered separately. (ix) The F-value was significant, revealing that the socio-economic status and the sociometric status were significantly related to each other.

**436. CHAUHAN, S.L.,** *Sociometric Correlates of Self-concept*, Ph.D. Edu., Agra. U., 1982

The objectives of the investigation were: (i) to study the structure of self-concept of adolescents, (ii) to survey the factorial dimensions, i.e., potency, activity and evaluation of sociometric status, (iii) to study the relationship between the factors of self-concept and the dimensions of sociometric status, and (iv) to study the differences in the self-concept and the dimensions of sociometric status on the pairs of sex, locality (urban-rural), and stream (arts-science).

The study was conducted on a sample of 541 students, 317 boys and 224 girls, selected from 16 sections of Class XI in 16 intermediate colleges, randomly selected in eight frames formed on the bases of boys-girls, urban-rural and arts-science dichotomies. The tools used were

Atma Podhi Mapini and Semantic differential scales.

The findings of the study were: (i) It was observed that the global self-concept of boys was significantly different from that of girls. This sex difference was found both among rural and urban students studying science and arts subjects. Male students had better global self-concept than the female students. (ii) The difference between the mean scores of self-concept of the urban and rural students was significant. This difference existed even when the subgroups based on eight frames of population on which the sample was selected were compared. The self-concept of rural students was found higher than that of urban students. (iii) The difference between the mean of the self-concept scores of the students studying science or arts subjects was not significant. This lack of difference existed even when the eight subgroups were compared except for four rural sub-groups. (iv) There was no difference among the three dimensions of sociometric structure. It was found that students perceived their group members as highest on evaluation and lowest on potency dimension and the order of the dimensions was uniform all through the subsamples. (v) There was no sex difference in the three dimensions of sociometric structure. (vi) There was no relationship between the factors of self-concept and the dimensions of sociometric structure.

**437. CHOPRA, K.,** *Effect of Partial Reinforcement and Different Types of Reinforcers on Resistance to Extinction among Pre-primary School Children*, Ph.D. Edu., Avadh U., 1982

This experimental study was designed to find out the relative effectiveness of different types of reinforcers and reinforcement schedules on resistance to extinction. It also aimed at the study of resistance to extinction in relation to the sex, socio-economic status and level of intelligence of the children.

Twelve groups of twenty-four children each in the age range 5 years 3 months to 5 years 9 months matched on age and intelligence (person for person) and consisting of equal number of boys and girls were set up. These children were drawn from twenty-four randomly selected pre-primary schools in Lucknow City. The Board Form of Raven's Coloured Progressive Matrices Test was administered individually to measure intelligence. Data regarding socio-economic status of the families were collected through home visits. A clown-type apparatus with a funny face, red-jewel light eyes, push button nose and slot

tray mouth was used for the administration of reinforcement and during the extinction trials. During the course of experiment each child received twenty acquisition trials in which he received candy or praise (two reinforcers) in accordance with the predetermined ratio, viz., the 100 per cent, 50 per cent or 25 per cent of the acquisition trials. After acquisition trials a record of the trials made during extinction was kept.

The results of the study were: (i) Both praise and candy reinforced the children; however, candy proved to be more effective. (ii) Irrespective of the reinforcer used, the administration of reinforcement on 25 per cent of the trials led to greater resistance to extinction. (iii) Children from lower socio-economic status families reacted to candy more favourably than children from upper socio-economic status families. (iv) There were no sex differences as regards resistance to extinction and candy led to greater resistance to extinction in the case of both boys and girls. (v) The level of intelligence of the subjects did not have any significant relationship with resistance to extinction.

**438.** DAGAUR, B.S., *A Study of Relationship between Anxiety and Creative Thinking*, Ph.D. Edu., Del. U., 1982

The objectives of the investigation were: (i) to study the relationship between anxiety and neuroticism, (ii) to verify Eysenck's claim of orthogonality of relationship between the three dimensions of personality — extraversion, neuroticism and psychoticism, (iii) to study mutual relationships between the three components of creative thinking ability and their relationships with composite scores, and (iv) to study the nature of distribution of anxiety, psychoticism, extraversion and neuroticism.

A stratified random sample of 762 subjects of class XI was initially selected from twelve senior secondary schools (10+2) of the Union Territory of Delhi; finally a sample of 394 subjects (186 male and 208 female) remained as the slightly high and slightly low anxiety groups were excluded and there was further reduction on account of experimental mortality. The tools used were the Dutt Personality Inventory, Eysenck Personality Questionnaire and Torrance Tests of Creative Thinking.

The results of the study were: (i) Individuals at different levels of anxiety did not give identical or similar creative responses. As regards originality the scores at the low level of anxiety were quite low but

at the high and average levels of anxiety were significantly higher. (ii) The flexibility, fluency and creative thinking scores at different levels of anxiety did not differ significantly among themselves. (iii) There was interaction of psychoticism and extraversion with anxiety. (iv) Neuroticism was a highly significant factor in predicting the creative thinking behaviour of individuals; the higher the level of neuroticism, the higher were the scores on component abilities of creative thinking and on the composite ability. (v) Comparison of high and low creatives on anxiety as dependent variable indicated that the high creatives on originality were significantly high on anxiety also; psychoticism was positively related to behavioural rigidity, which limited creative self-expression implying that not all kinds of anxious persons tended to be creative. (vi) Extraverts were more creative (flexibility and fluency) than introverts except in the case of originality as creative ability. (vii) The mean originality scores of hysterics were significantly higher than those of dysthenics. (viii) Males and females did not differ as regards creative thinking abilities. (ix) Anxiety, extraversion and neuroticism were normally distributed. (x) Neuroticism and extraversion and neuroticism and psychoticism had negligible relationship. (xi) There was high positive relationship between anxiety and neuroticism and between psychoticism and anxiety.

**439.** DAS, U.C., *Effects of Certain Non-intellective Variables upon Cognitive Learning among Elementary School Children*, Ph.D. Psy., Utkal U., 1978

The objectives of the investigation were: (i) to study the effect of certain non-intellective (organismic and personality) factors, specifically sex, social class and educational level on cognitive learning in the low economic background children and (ii) to study the relationship between responsibility, self-perception, cognitive style and learning.

The design of the study was  $3 \times 2 \times 4$  factorial one, having three levels of social class (high, middle, low), two levels of sex and four levels of education (classes III, IV, V and VI). A total of 360 subjects (fifteen in each cell), drawn randomly from the primary and middle schools located in rural areas and belonging to low income group (income less than Rs 200 per month) participated in the study. The scores on Intellectual Achievement Responsibility Scales, Self Concept Scale and Children Embedded Figure Test

were correlated with a series of cognitive learning measures like digit symbol, digit span, matching familiar figures, memory for designs, word recognition, concept learning, logical ability and school achievement (verbal, quantitative and general).

The study yielded the following results: (i) Brahmin children were superior to other caste groups on Digit Symbol and Digit Span Tests but were inferior in Memory for Design Tests to that of low caste children. (ii) Girls committed a large number of errors in Digit Symbol Task whereas boys secured higher scores on Logical and Abstract Reasoning Tests and achievement in arithmetic. (iii) The education effect was significant in most cases except concept learning task. (iv) Girls belonging to higher class had significantly greater span than boys whereas the position was reverse in other two social classes. (v) At the lower educational level, overall achievement of the higher caste children was superior to other two castes at the upper level and the performance of the middle class group slightly increased over the higher class subjects. The boys did better in Classes III and IV achievement task (verbal) while girls did better at higher classes. (vi) Self-responsibility was positively related to efficiency in digit symbol task, matching familiar tasks, concept learning, logical and abstract ability and overall areas of school achievement. The relationship was more stable in higher classes than in lower groups. (vii) Analytic cognitive style was significantly and positively related to efficiency in digit symbol, digit span, matching familiar figures, logical and abstract abilities and school achievement. (viii) Self-concept was found to be an important variable in influencing cognitive learning tasks such as digit symbol, digit span, memory for design, matching familiar figures, logical and abstract ability and school achievement.

440. DASTOOR, H.F., *Study of Self-concept of Nurses in Gujarat State*, Ph.D. Edu., Guj. U., 1982

The main objectives of the investigation were: (i) to study the different types of self-concepts prevalent among nurses, (ii) to assess the relationship between the types of self-concept and job performance, (iii) to compare the self-concept of the most efficient and the least efficient nurses, (iv) to enlist desirable and undesirable qualities to be kept in mind during admission of candidates for nursing, and (v) to make suggestions for the development of self-concept during

training which may lead to professional efficiency.

From the forty odd hospitals in the State which give generalised services eleven hospitals with more than 150 patients were selected. Of the 1,324 staff nurses working in these hospitals, 700 were taken for the study by a stratified, proportionate, incidental sampling method. After two refinements a structured questionnaire consisting of 41 questions was prepared. The questions covered such aspects as choice of profession, opinions and feelings about the profession, educational requirements, efficiency, knowledge, nursing activities and the future of the profession. This tool was used to find out the self-concept. Another tool was constructed which was adopted from the Slater Proficiency Scale to measure job proficiency. The questionnaire was sent to the 700 sampled nurses. The return was 62.8 per cent. Besides this large group, two more smaller groups with known good and poor job proficiency were chosen. These groups helped in finding out the relation between self-concept and job performance through the causal comparative method. On the basis of an analysis of the 440 questionnaires that were returned positive and negative attributes were listed. These were then arranged to form first ten and eventually four patterns of self-concept.

The findings were: (i) In all patterns, positive attributes were found to be far more than the negative attributes. Almost 71 per cent of the nurses had a very high to a high self-concept, while about 30 per cent had a low to very low self-concept. (ii) Of the high self-concept group; 59.6 per cent scored high in job proficiency too, and 93.3 per cent of the low self-concept group were low on job proficiency scale. (iii) The nurses with high job proficiency and a high to very high self-concept had little or no doubt about the profession. (iv) The nurses with low proficiency and high self-concept showed doubts about the profession. (v) The nurses with low proficiency and low self-concept had definite doubts about their profession. (vi) The nurses with high proficiency did not come to low or very low level of self-concept. (vii) All nurses were aware of some negative aspects of nursing which were emphasized more by the low self-concept group.

441. DATTA, V., *A Study of Ascendence-submission in Intermediate Students : Boys and Girls*, Ph.D. Edu., Luc. U., 1980

The objectives of the study were: (i) to develop a

scale and apply it for finding out the extent of ascendance-submission in the students of intermediate classes, and (ii) to find out the relationship between ascendance-submission and intelligence, socio-economic status, educational achievement, sibling position, religion, courses offered, colour preferences and sex.

The sample consisted of 409 boys and 402 girls studying in Classes XI and XII of intermediate colleges in Lucknow. For the collection of data regarding ascendance-submission, the researcher developed a scale of ascendance-submission. There were thirty-nine items in the boys' scale and thirty-five items in the girls' form. The split-half reliability of the scale for the boys was 0.81 and of that for the girls was 0.83. Test pretest reliability of the scales worked out to 0.81 for the boys and 0.72 for the girls. For the assessment of intelligence, Verbal Intelligence Test (Ojha and Ray Chowdhary) was used. For the assessment of socio-economic status, Socio-Economic Status Scale Kulshreshtha was used. Colour Test (Luscher) was used to find out colour preference of the subjects. Information about divisions secured in the high school examination, sibling position, religion and caste was collected with the help of a questionnaire.

The major findings were: (i) The more intelligent subjects made reason-oriented responses leading to decrease in ascendancy. Higher intelligence also made subjects comprehend things and situations better resulting in greater confidence and decreased submission. (ii) The high SES adolescents were more ascending than the low SES boys but no such difference was found for the girls. (iii) There was significant relationship between ascendance-submission and educational achievement. (iv) Among the girls the youngest ones were more dominating. (v) There was no relationship between ascendance-submission and the religion of the subjects. (vi) There were no significant differences in respect of scores on ascendance-submission scale among the subjects offering science, commerce or agriculture.

**442.** DESAI, H.G., *Effects on Intelligence of Birth Order and Sex*, Dept. of Edu., Sau. U., 1971; 1974 (Sau. U. financed)

The objective of the study was to find out whether the future generation would be intellectually superior or inferior as a result of family planning.

The 1971 study was conducted on a small sample

of 383 subjects (223 boys and 160 girls). The subjects were administered Desai-Bhatt Verbal Intelligence Test and Bhavsar Non-verbal Intelligence Test, both in Gujarati. The first six birth orders were taken into consideration for analysis.

The findings were: (i) The third-born boys had the highest verbal I.Q., significantly higher than that of the first-born and the second-born boys. The boys in the fourth, fifth and sixth birth orders did not excel the first-born and the second born. (ii) The first-born and the second-born girls had significantly higher verbal I.Q. than the third-born girls who, in fact, had the lowest verbal I.Q. The girls in the fourth, fifth and sixth birth orders did not excel the first-born and the second-born. (iii) The girls in no birth order excelled the third-born boys, but the first-born and the second-born girls excelled the first-born and the second-born boys in verbal intelligence. (iv) The third-born boys tended to have the highest non-verbal I.Q. though they were significantly higher than the second-born boys only. (v) The girls in all birth orders had almost similar non-verbal I.Q.

As the 1971 study was made on a small sample it was replicated to study 2,651 subjects (1,546 boys and 1,205 girls). It was decided to drop the aspect of non-verbal intelligence because, in the earlier study, birth orders were not related to it in the case of either sex. First through seventh birth orders were taken into consideration for analysis.

The replication study showed that: (i) Boys in the first through seventh birth orders did not differ in verbal intelligence. (ii) The first-born girls had the highest verbal I.Q., significantly higher than the I.Q. of the third-born, the fourth-born and the fifth-born girls. (iii) The first-born girls excelled the boys in all the birth orders. (iv) The first-born and the second-born girls did not differ in their I.Q.

The first study (1971) and its replication (1974) provided justification for the family planning campaign.

**443.** DESHMUKH, M.N., *An Analytical Study of Some Scholastic Conditions and Practices as Contributory Factors to Creative Ability*, Ph.D. Edu., Nag. U., 1979

In the context of the education system emphasizing convergent thinking by classroom instruction, the study was designed to find out, experimentally, if appropriate manipulation of teaching-learning process could promote creativity.

The procedure consisted of surveying the existing classroom instruction process for conditions to develop creative ability of pupils and conducting an experiment to investigate the efficiency of role-playing and brainstorming techniques in the development of creativity. The sample for the survey comprised fifty-one teachers of Marathi and social science randomly selected from ninety-four Marathi-medium secondary schools in Nagpur City. The sample for the experiment included 114 boys and 30 girls studying in randomly selected three sections of Class VIII in one of the twenty schools involved in the survey. The tools used in the study were Denny's Classroom Creativity Observation Schedule (CCOS), Group Test of Intelligence (Khanapurkar), Socio-economic Status Scale (Kuppuswami), Torrance Test of Creative Thinking (TTCT), Minnesota Creative Activity Checklist and students' reaction schedule prepared by the investigator. For the survey, the teaching of each of the fifty-one teachers was observed at least twice on CCOS. The observations were made by three trained observers. The data were analysed for frequency with which each of the creative teaching behaviour occurred as postulated in CCOS. For the experiment, the investigator taught the experimental group A by the role-playing technique, and group B by the brainstorming technique. The controls, group C, were not given any treatment. Group A was taught Marathi for thirty class periods and Group B social science for an equal number of periods. Attempt was made to create conditions for physical and instructional openness, removal of blockages to creative development, freedom of expression, psychological safety, minimum teacher and group constraints and maximum student participation and initiation, responsive motivational climate for extended effort while differing judgement and encouragement to divergent thinking and appreciation of unusual ideas during the experimental teaching. Multi-factor covariance design was employed for the comparison of groups on post-test scores on various creativity and scholastic achievement variables. The t-test was used to find out sex differences in creativity. Relationship between intelligence and creativity was calculated by product moment correlation.

The major findings were: (i) The classroom teaching was found to be very low in motivation, student involvement and peer interaction. It was primarily convergent in nature. (ii) Teaching through role-playing and brainstorming was characterized by high positive motivation, pupil involvement, positive peer

interaction and encouragement to unusual responses. It was primarily divergent in nature. (iii) Brainstorming was found to be more interesting and effective in establishing teacher-pupil rapport and in encouraging unusual responses than teaching through role-playing. (iv) Gains in creativity of the brainstorming group and losses of the role-playing group were there irrespective of the level of intelligence. (v) In the role-playing group, low creative students gained on all verbal creative factors, figural originality and composite score for creativity. (vi) Generally, girls performed better than boys on creativity measures indicating significant sex differences in creativity. (vii) There was moderate positive relationship between creativity and intelligence for various creativity factors.

444. DESHPANDE, S.W., *Anxiety, Background Meaningfulness and Isolation Effects in Serial Verbal Learning*, Ph.D. Psy., Nag. U., 1976

The study was designed to find out the influence of anxiety, background meaningfulness and isolation on serial verbal learning. The degree of isolation, the meaningfulness of the item and the strength and level of meaningfulness were assumed to interact in a complex manner to determine the speed of learning of the isolated items.

The sample comprised 132 high anxiety (HA) students and 128 low anxiety (LA) students selected on the basis of their scores on Sinha's Anxiety Scales administered to 1,000 Hindi-knowing students within the age range of sixteen to twenty years from Nagpur, Pune, Marathwada and Shivaji Universities. The other tools used were: (i) a list of twelve meaningful words (MW) chosen from the scaled list of meaningfulness calibrated by Noble from the Thorndike-Lorge count, (ii) a list of twelve nonsense syllables of 30 to 40 per cent association value selected from Galze's list, and (iii) Memory Drum to expose to serial lists of nonsense syllables and meaningful words. The design of experiment had 120 students in each group having high and low levels of anxiety, meaningfulness of the list of syllables (background meaningfulness) at two levels, viz., high and low, and isolation manipulated in three levels. The experimental design used was  $2 \times 2 \times 3$  factorial one with twenty equal replications. The subjects were randomly assigned to treatments. Learning experiment with a two second-interval and six second trial-interval was performed. The learning measures used were the total errors and the total

trials for each subject to reach one errorless reproduction. Analysis of variance, chi-square and Kolmogorov-Smirnov two sample tests were used for the treatment of data.

The major findings were: (i) The low-anxious subjects were better in performance in the serial learning task, the learning of nonsense syllables (difficult task). (ii) The learning of the isolated item was facilitated and the isolation effect was more pronounced in nonsense syllables. (iii) The McCray-Hunter hypothesis was found to be valid for the anxious population and held for different types of material (NS and MW lists). (iv) The HA and LA subjects did not differ on the various types of errors in the serial learning, viz., omissions, transposition and extra list intrusion errors. However, the occurrence of the transposition and the extra list errors was a function of meaningfulness of the list, the former being more in the list of meaningful words while the latter were more in the list of nonsense syllables.

**445.** DESHMUKH, K., *Personality Characteristics of the Physically Handicapped*, Ph.D. Psy., Nag. U., 1979

The objectives of the study were: (i) to find out whether the physically disabled revealed personality profiles distinct from those of the normal, and (ii) to find out the manner in which different personality variables interacted and interrelated between each other.

The sample consisted of 200 physically disabled cases having orthopaedic deformities, selected from State-owned institutions for the physically handicapped and from private orthopaedic clinics, with the consideration of minimum educational level, language proficiency, availability and traceability of persons and their willingness to cooperate in the investigation. A group of equal number of normal persons was taken for comparison and was matched with the disabled group in respect of age, sex, education and socio-economic status. The tests administered individually as well as in groups, to collect data were I.E.C.R. Scale Internal vs External Control of Reinforcement (Rotter) to assess the locus of control beliefs, Social Behaviour Scale (Sinha) to measure dependence proneness, Jagawar Test for the assessment of self-concept, Sentence Completion Test (Mukherjee) to assess the need for achievement, Manifest Anxiety Scale to measure anxiety proneness, Authoritarian/Democratic

Test (Jagawar) to measure democratic vs authoritarian attitude of parents, Acceptance-Rejection Scale (Jagawar) to measure acceptance vs rejection of parents by the individual. The personality variables selected for the study were locus of control, self-concept, dependence proneness, achievement motivation and anxiety. For environmental factors, the two aspects of family environment included were democratic vs authoritarian parents as perceived and reported by the individual and acceptance vs rejection of parents as reported by the individual. The means of the scores for the personality dimensions under study were obtained for both the groups. Scores on certain dimensions were subjected to analysis of variance with the data arranged in a  $2 \times 2 \times 2$  factorial design.

The major findings were: (i) No significant difference between the personality scores of the physically disabled and the normal was observed. (ii) Anxiety was the only significant effect, implying that persons with high and low levels of anxiety differed with respect to their beliefs regarding the locus of control. (iii) The difference between the means of locus of control scores of the disabled and of the normal subjects was absent among the subjects high in manifest anxiety but it seemed to appear among those with low anxiety. (iv) The difference between the locus of control of beliefs of the disabled and that of the normal was slightly greater in the case of subjects perceiving their parents as democratic than in the case of subjects who saw their parents as authoritarian. (v) There existed no difference in the level of achievement motivation of the physically disabled and the normal persons. (vi) Physically disabled persons tended to be more dependence-prone than the normal. (vii) The difference between the dependence-proneness of the disabled and the normal persons was slightly more pronounced in the case of persons perceiving their parents as authoritarian than in the case of those who saw their parents as democratic. (viii) Physically handicapped persons differed from their physically normal counterparts with respect to manifest anxiety; the disabled displayed relatively greater manifest anxiety. (ix) Subjects having higher or brighter self-concept tended to experience relatively less manifest anxiety ( $M = 11.73$ ) than those who had a low or less bright self-concept ( $M = 14.00$ ). (x) Persons with brighter self-concept tended to show relatively less dependence-proneness. (xi) Males and females differed among themselves significantly with respect to manifest anxiety; females tended to be more anxious than males.

446. DEVI, C.L., *An Analytical Study of Social Development of Nursery School Children*, Ph.D. Edu., Ker. U., 1975

The purpose of the study was to analyse the various aspects of development trends in social behaviour of nursery school children.

The cross-sectional approach was used to study the social behaviour of 200 children in twelve nursery schools in Trivandrum district, grouped in the age ranges 3-4 and 4-5. The sample was drawn from urban and rural areas and included both boys and girls in equal number in the two age groups. Social behaviour was studied in relation to physical, motor, personal, language and intellectual development and participation in school activities. The main technique for the collection of data was observation with time sampling, and tape-recording. Observation diaries on social behaviour of pupils were maintained by parents and teachers on the basis of which parents filled the data forms and teachers completed check lists. Interviews were used to supplement the data. The tests of intelligence used were Seguin Form Board, Maniken Test and Porteus Maze Test. Frequency analysis was made for patterning social behaviour into three categories — very high, average and low. Discriminating values between the two age groups were calculated for each aspect of social behaviour analysed.

The different aspects of each of the areas of social behaviour were identified and categorized into personal, social and intellectual, which were then patterned into different categories from high to low. The manifestations of these aspects in the activities of children were described. The main findings were: (i) The relationship of intelligence, sex, health, and the birth order of children and the religious beliefs of parents to social behaviour were not found to be significant, and with the size of family not conclusive. (ii) The absence of parents was found to be significantly related to low social development. (iii) The economic status, occupation and education of parents discriminated between high and low groups in social development. (iv) The relationship between the environment of school and social behaviour was found to be linked to the economic level of parents. Boys were found to prefer girls in play activities, but girls preferred their own sex. (v) Favourable attitude to school was seen among the high social groups.

447. DHAR, R., *An Analysis of the Emergence of*

*the Sense of Humour in Children and Its Educational Implications*, Ph.D. Edu., Jammu U., 1981

The specific aims of the study were: (i) to know the various stimuli which could make young children laugh, and (ii) to know the effect of age, sex, intelligence, and socio-cultural factors on the sense of humour. A sample of 3,320 was selected out of thirty-five institutions.

The main findings of the study were: (i) The sense of humour gradually emerged as a direct function of increase in age, high culture, high intelligence, better socio-economic condition, better academic achievement and humorous temperament. (ii) In young children smile and laughter were caused by the squeak of toys, slow whistling, musical sound, etc. (iii) Intelligence had a marked positive relationship with the sense of humour. (iv) Culture had a positive but low relationship with the sense of humour. (v) Girls seemed to have more sense of humour than boys. (vi) Science group students seemed to have more sense of humour than arts group students.

448. DHEER, J.R., *Protein Synthesis Inhibition and Memory*, Ph.D. Psy., Kur. U., 1982

The major objective of the study was to test the hypotheses that (i) immediate post-learning administration of protein synthesis inhibitor leads to inferior retention, (ii) any time lag between the training at the beginning of protein synthesis inhibition would lead to lowered memory disruption, and (iii) increased duration of protein synthesis inhibition would lead to greater memory disruption.

The hypotheses were tested with a multigroup design consisting of experimental groups and control groups. Anisomycin was used as protein synthesis inhibitor for experimental groups and sodium chloride for control groups. A sample of ninety-six albino rats, about ninety days old and weighing  $120 \pm 5$  grams was divided equally among eight groups. Nine rats died and seven were eliminated during the course of experiment. Therefore, the size of the sample differed in various groups. The first three groups were injected anisomycin and the other three groups 0.9 per cent sodium chloride. The process of injection in both types of group was similar; the first group in each case was given one injection, the second group two injections, and the third group three



injections. The first injection was given immediately after training, the second after an interval of two hours and the third after an interval of four hours. The other two groups (Groups VII and VIII) were given an injection of anisomycin and sodium chloride, respectively, at an interval of two hours after training. The training and the learning task were carried out through the Active-Passive avoidance apparatus. Each rat in a group was given training in a similar manner. The retention test was given to each rat twenty-four, forty-eight hours, seven days and fourteen days after training. The significance of difference between the performances of various groups was tested with the help of Fisher exact probability test.

The findings of the study were: (i) Anisomycin interfered with the memory consolidation processes only if it was administered immediately after learning. It became ineffective if its administration was delayed by two hours. (ii) There was no use extending the duration of protein synthesis inhibition beyond two hours for single trial passive avoidance task. (iii) There was disruptive effect of immediate post-learning administration of anisomycin on the memory consolidation process. (iv) Immediate starting of protein synthesis inhibition after learning was highly disruptive for retention.

**449.** DHILLON, G.K., *A Comparative Study of the Personality Characteristics, Adjustment and Motivational Level of Non-participant and Participant Children of Secondary Schools in Physical Activities*, Ph.D. Phy. Edu., Punjabi U., 1979

The major objectives of the study were: (i) to find out if there was any significant difference between non-participants and participants on extraversion, neuroticism, adjustment, achievement motivation and academic achievement, (ii) to find out the sex-wise difference on the dimension of extraversion, neuroticism, adjustment and achievement motivation, and (iii) to find out sex-wise difference in achievement motivation.

The study was conducted on 800 students drawn randomly from the schools of Punjab. Equal number of boys and girls were taken from among participants and non-participants. The ages of the students ranged from 14 to 17 years. They were administered three tests, viz., the Junior Personality Inventory, Bhagia School Adjustment Inventory and the Lynn Achievement Motivation Questionnaire. The data were

analysed through two-way factorial design of analysis of variance which was supplemented with the t-test.

The main findings of the study were: (i) Participants scored higher than the non-participants on extraversion although the difference failed to reach a significant level. (ii) Participants scored significantly higher on the dimensions of neuroticism than non-participants. (iii) In all aspects of school adjustment, in academic matters, adjustment with schoolmates, adjustment with school and administration, adjustment with teacher and adjustment with self, the participants scored significantly higher than non-participants. (iv) Participants scored higher than non-participants on achievement motivation. (v) The academic achievement of participants was found to be significantly higher than that of non-participants. (vi) No significant sex differences were obtained on the dimension of extraversion, neuroticism and achievement motivation except in the case of overall school adjustment. (vii) The academic achievement of female participants emerged significantly superior to that of male participants.

**450.** DIXIT, G., *A Developmental Study of the Rorschach Response Pattern of Children between Five Plus and Ten Plus*, Ph.D. Psy., All. U., 1963

The aim of the study was to develop norms for the Rorschach test for children of five to ten years. The sample consisted of three hundred boys and girls of Allahabad City of which fifty children at each of six different age levels, viz., five, six, seven, eight, nine, and ten, were administered the test. They were drawn from forty institutions of Allahabad and belonged to families of teachers, servants (both government and private), businessmen, lawyers and doctors, representing various castes, creeds and socio economic statuses. The central tendencies, dispersion and percentages were computed.

The findings were: (i) At the age of five children indicated a fairly good receptivity and responsiveness to the world around. They were factual and form controlled in their manner of responding. The perception was undifferentiated and was mostly governed by what was obvious. At the age of six, spontaneity as well as emotional reactivity were satisfactorily developed with the F column composed of common responses. The bulk of the responses were in central area indicating that children of six years had great attachment to reality and their perception like that of children of five was governed more by what was obvious and factual and indicated less variegated experiences. At the age of seven, the perception

was guided more by facts than by fantasy and emotion; children were matter-of-fact and realistic in the manner of responding. The perception was more determined by facts than by emotion or fantasy at the age of 8+. Children were factual and realistic in the manner of responding at the age of nine, the perception was mostly governed by form quality of the blot indicating that they were realistic and factual in their manner of responding. Lastly, at 10+, the perception was more influenced by the form qualities of the blot than by fantasy and emotions, and was realistic and factual. (ii) At 5+, the outer central was socialized to a great extent. Though there was presence of semi-controlled responsiveness, indicating emotional instability and impulsiveness, along with chances of uncontrolled emotional outbursts, they were gradually controlled by learning to express emotions in a socially approved manner. Children did not possess enough inner resources which could enable them to meet emotional impact by delaying action long enough to gain control over outward expression of behaviour. The ego organisation was fairly well integrated at the age of 5+. At the age of 6+, they gradually tried to gain more command over emotional expressions and made definitive advance in the area in comparison to those at 5+. There was a lack of inner resources required for adequate inner control. The ego was fairly well-integrated and its organization was better than in the previous year. At the age of 7+ the control of emotional responsiveness and impulses to the outer world was evident by the socially approvable behaviour; there was improvement in inner resources necessary for adequate inner control. The ego at this age was better organised and more integrated. At the age of 8+, for controlling their emotional responsiveness to outer environment, children had acquired certain socially approved mode of behaviour which they used to express their emotions. At this age, they possessed better resources for maintaining proper inner control. Their ego was properly developed and well organized. At the age 9+, the subjects had good emotional responsiveness and had comparatively better inner resources at their disposal for adequate inner control, while the ego was fairly well organized and was in touch with reality. At the age of 10+, the subjects had control over emotional impact without loss of responsiveness. They had comparatively richer inner resources required for adequate inner control and their ego organization was properly integrated. (iii) Children at 5+ were fairly well adjusted to their environment. The adjustment level improved with age (iv) Children of five years were extratensive and emotionally more reactive to the factors of environment. There was extratensive

balance at the age of six. At seven, children were more responsive to the prompting from without than from within. At the age of eight the subjects were extratensive. The nine-year-old children were more responsive to their environment both in terms of overt emotional expression and affectional warmth of feeling. The ten-year-old children reacted to the environment freely both in terms of overt emotional expression and affectional warmth of feeling. (v) The percepts and concepts of the five-year-old children were definite and clear. The reasoning power improved with age. At ten, the children's memory images were more definite and clear. (vi) The five-year-old children lacked well developed value system and emotional integration. The six-year-old children had better emotional integration and their ego was becoming somewhat tolerant of some archaic or primitive impulses. The seven-year-old children were more mature and conscious of the fantasy process. They had a capacity to absorb experience and to benefit by it. The presence of better developed value system and greater empathetic understanding and acceptance of archaic needs along with creative imagination were found in the eight-year-old children. They now possessed more capacity to absorb experience and to benefit by them. In the nine-year-old children, the value system was more developed than in the previous years. Their ability to accept and identify with others showed improvement. The ten-year-old children took heed of their interest in society, and possessed more developed ability to accept others and identify with them. (vii) There was a good degree of agreement between the opinion of teachers and parents and that of the psychologist. It showed the validity of the Rorschach test.

451. DUBEY, P., *The Study of Effects of Frustration on Personality Development*, Ph.D. Psv., Kum. U., 1980

The study aimed at finding out (i) statistical and scientific description of frustration and conflict, (ii) scientific discussions on frustration dynamics in personality development, and (iii) the relationship of frustration and some important aspects of personality structure, viz., intelligence, adjustment, attitude and motivational factors.

It was an experimental study of effects of frustration and was based upon observations. A sample of 400 male children from Class IV of different schools in the age group 8 to 10 years was randomly chosen in a game situation and tension was created in the individuals to win

the game. Four similar round coloured boxes,  $20 \times 2$  white and black wooden squares, a stop watch, a divided two-sided table constituted the equipment used. An attitude scale was also used for collection of data. The two groups — successful (control group) and unsuccessful (experimental group) — were treated in the two tasks (A and B) in a counter-balancing way. Successful students were treated as the non-frustrated whereas the unsuccessful subjects were treated as the frustrated group. The motivation, conflict, displacement formation of attitude and adjustment were taken as dependent variables and were studied in similar situation. A comparative study was made between the two groups in the two situations.

The findings were: (i) The frustrated individuals took more time than the successful group to select an alternative for their drive to draw wooden squares. A high degree of conflict existed. (ii) In the condition of frustration the level of motivation decreased. At a particular stage of frustration individuals left the game. (iii) Defence mechanisms were applied by these individuals to adjust themselves to the situation. Over-confidence developed in the successful subjects. Projection, withdrawal, regression, displacement and compensation were the observed defence mechanisms. (iv) The frustrated individuals formed aggressive and other reactions against the game, the observer, the judgement and the winners. A negative attitude was formed among the frustrated individuals. (v) Intelligent subjects, who were frustrated, showed a high degree of conflict, more displacement and a low degree of motivation as compared to normal frustrated group. There was greater effect of frustration among the intelligent group. (vi) The frustrated individuals were more affected by suggestions. Suggestions helped them in decreasing the degree of conflict. (vii) Frustration could become the cause for another motivation for the next drive to achieve success. (viii) During frustration, the subjects looked for suggestions that could positively affect them. Unsuccessful students did not accept suggestions.

**452.** DUBEY, S.N., *Reaction to Frustration as a Function of Personality Factors and Need Patterns of Scheduled Caste Adolescents and Young Adults*, Ph.D. Psy., Jod. U., 1982

The objectives of the study were: (i) to examine the ways in which adolescents and young adults of the Scheduled Caste reacted in a frustrating situation, (ii) to find out differences in the pattern of hierarchy of reac-

tion to frustration between the two age groups, (iii) to explore the personality and need correlates and differentials of extreme reactions to frustrations, and (iv) to examine the factorial structure of reactions to frustration in relation to personality and need variables among the Scheduled Caste subjects.

A correlational field study using extreme group analysis was adopted. The S-O-R strategy was employed in which the ego and super-ego blocking situations acted as S component, personality and need variables took the place of O variables and the reactions to the frustrating situation were the R measures. In all, 608 students were selected from government higher secondary schools (for adolescents) and M.B.M. Engineering College (for young adults) of Jodhpur City. The Indian adaptation of the Rosenzweig P-F Study (Adult form) by Pareek, Devi and Rosenzweig were used for assessing reactions to frustration. Personality variables of the subjects were measured by Cattell's HSPQ and 16 PF Personality Questionnaires adapted in Hindi by Kapoor. To measure the need patterns, Tripathi Personal Preference Schedule (TPPS) was used. Critical ratio and correlations were calculated to analyse the data.

The findings of the study were: (i) The Scheduled Caste (SC) adolescents had significantly higher mean on ego-defensive and extraggressive reactions but lower on need-persistent, introgressive and irrelative reactions as compared to the non-SC ones. There was an identical reaction pattern among the two caste groups. (ii) The SC young adults did not differ significantly on any category of reactions to frustrations from the control group of non-SC young adults. (iii) The SC adolescents and young adults, were, by and large, similar in the way they reacted in a frustrating situation except that the young adults had significantly higher mean on obstacle dominance and lower on need persistence as compared to the adolescents. There was a high degree of parallelism in the reaction pattern of the two castes. (iv) The non-SC young adults differed significantly from adolescents on five reactions. They had significantly higher mean on obstacle dominance, ego defence and extraggression and lower mean on need-persistent and introgressive reactions. (v) The OD reactions of the SC adolescents had significant correlation with personality characteristics like happy-go-lucky (factor F+) only. The OD responses of SC young adults were significantly and negatively correlated with personality factors A, F, G, M, Q<sub>1</sub>, Q<sub>2</sub>, Q<sub>4</sub> and positively with I. (vi) Reservedness, sobriety, expediency, carefulness, conservatism, group dependence, tense and tender-mindedness were found to be the personality characteristics of the OD responses. (vii)

Non-SC adolescents' OD responses were characterized by reservedness (factor A), threat-sensitivity (factor H) and low integration (factor Q<sub>3</sub>). (viii) Non-SCs giving OD responses were found to have need for aggression and friendlessness while SCs had need for independence and low persistence. (ix) Personality factors A, D, and H were negatively correlated with ED responses of SC adolescents. (x) ED responses were negatively correlated with factors A, I and positively with N. Reservedness, self-reliance and shrewdness were the personality characteristics of ED responses. Among SC students personality factor A, was found to be consistently negatively correlated with ED responses in both the age groups. (xi) Personality factors A, C and I were negatively and E, L, O and Q<sub>4</sub> positively related with ED reactions of non-SC young adults.

**453.** DUTTA, S., *Learning and Retention as a Function of Affectivity*, D.Phil. Science, Cal. U., 1960

The main aim of the study was to explore the implications of the hypothesis that affective intensity, irrespective of the quality of feeling tone, was the determinant of selective retentivity of emotional experiences.

Three experiments were carried out. The first two experiments were performed to test the hypothesis that the degree of affective tone of material gets changed when experienced under varying degrees of emotional involvement and that such intensity of perceived affect of material determined its retention. The subjects were chosen from Bengali lingual group. Ten pleasant and ten unpleasant adjectives matched for their intensity for affect and frequency of usage were presented to four groups (twenty subjects in each group in Experiment I) as also to each of the four groups (each consisting of fifteen subjects) in Experiment II. All these adjectives were rated by the subjects on four evaluative scales. Subsequently, in Experiment I each group was presented with two research reports, one on Bengali and the other on Lampani, where another set of ten pleasant and ten unpleasant adjectives were used. Five pleasant and five unpleasant adjectives were attributed to Bengali and Lampani, respectively. All these adjectives as attributed to either Bengali and Lampani were again evaluated by the subjects on four evaluative scale. Subsequently, the subjects in each group were asked to recall all the adjectives used in the research reports presented to them. In the case of Experiment II, the same procedure was followed, except that Bengali was replaced by Kasanda — an African tribe. Greater emotional involvement on the part of the subjects was provided in Experiment I than in

Experiment II. In Experiment III, the generality of intensity hypothesis regarding the retention of affective materials was tested. The experiment was designed in consistency with the experimental framework on the basis of which Rosenzweig (1943) proposed his theoretical model with respect to need persistive and ego defensive reaction patterns as also to their relations to selective retentions. Twenty puzzles were presented to the subjects who were asked to solve them, under two levels of emotional involvement, viz., task-orientation and ego-orientation. In all, eighty Bengali undergraduate students, sixty undergraduates and sixty graduate students and research workers were included in Experiments I, II and III, respectively.

The results generally demonstrated that under varying degrees of emotional involvement, the perceived intensity of affect got changed in accordance with the principles of the theory of cognitive dissonance proposed by Festinger, and that the affective intensities of P and U materials, as experienced by the subjects, determined their selective pattern of retention. Under task-orientation, unpleasantness due to completion of a task was experienced as more intense than pleasantness due to incompleteness of a task. Under ego-orientation, unpleasantness due to incompleteness was experienced as less intense than pleasantness due to completion. Selective patterns of retention were found to be consistent with such patterns of affective intensity as perceived by the subjects under two different levels of emotional involvement. More unpleasant than pleasant tasks were retained under task-orientation while more pleasant than unpleasant tasks were retained under ego-orientation. Irrespective of the qualities of affect as also of the contexts, the tasks perceived to be more intense in affect were retained better.

**454.** DUTTA, T., *Effects of Malnourishment on Self-concept, Personal-Social Adjustment and Cognitive Competence among Low Income Group School Children*, Ph.D. Psy., Utkal U., 1979

The study aimed at investigating the effects of malnourishment on self-concept, personal-social adjustment and cognitive competence of boys coming from low income families.

Boys numbering 360 and reading in Classes IV and V of 100 schools scattered in Cuttack, Puri and Balasore districts served as subjects. Each subgroup had sixty subjects. The children were divided into six subgroups on the basis of their height, caste and area of residence.

The-Way-I-Feel-about-Myself Scale (Piers-Harris) was used to measure the self-concept of children. Teachers' Rating Schedule (White and Watts) and Parental Expectancy (Dyer) were used to measure the personal-social adjustment of children. The tests used to measure their cognitive competence were Cross Modal Coding (Birch and Belmont), Visual STM (Howarth and Browne), Auditory STM, Coloured Progressive Matrices, Colour-Word Test (Stroop), Word Definition Test and Matching Familiar Figure Test (Kagan). The results were analysed by using the F-test and regression analysis.

The findings were: (i) The parents of brahmin children were found to be significantly taller than those of Harijan children. (ii) The brahmin children were significantly younger than the Harijan children. (iii) The brahmin children had significantly higher self-concept, personal-social adjustment and parental expectancy scores than the Harijan children. (iv) The brahmin children were also found to be significantly superior to the Harijan children with regard to the performances on school achievement, Cross Modal Coding, Visual STM, Auditory STM (Serial Recall) and Word Reading Time. (v) Malnourishment adversely affected the scores on self-concept and parental expectancy. (vi) The less malnourished (tall) Harijan children were found to be better than severely malnourished (short) Harijan children, no matter whether they came from the rural or the urban background. (vii) The tall Harijan children had significantly higher scores on Auditory STM (free recall) and discrimination learning tasks. (viii) The urban Harijan children were found to be superior to the rural Harijan children in linguistic competence as reflected by the scores on Word Definition Test. (ix) The number of children in the family was fairly good predictor of performance in Cross Modal Coding and Word Definition Test of severely malnourished rural Harijan children and of Auditory Short Term Memory for severely malnourished rural brahmin children. (x) Parental expectancy scores influenced, to a considerable extent, the competency in Word Definition (abstract) of less malnourished rural Harijan children and in Word Definition (descriptive) of severely malnourished brahmin children.

455. DWIVEDI, K., *The Phenomena of Retroactive and Proactive Inhibition as Functions of Original Learning (OL), Interpolated Learning (IL), Set (S) and Time Interval (TI), among Adolescent Students of Secondary Institutions of Kanpur*, Ph.D. Psy., Agra U., 1982

The purpose of the study was: (i) to determine the effect of original learning, interpolated or prior learning, set and time interval on retroactive and proactive inhibitions related to memory process; and (ii) to study them in their variate-interactional situation and not imply in their univariate contribution.

The study was designed to take up both retroactive and proactive aspects in a single experiment. Four independent variables — original learning, interpolated or prior learning, set and time interval — comprised the multivariate experimental complex. Each independent variable was an active variable having two levels each. Thus the treatments  $2 \times 2 \times 2 \times 2$ , were combined into a factorial design. The scores were in terms of retention scores, calculated as ratio of two different recalls as per requirement of the experimental situations. The controlled variables were related to list structure, task and subjects. The main method of control was constancy, though the method of removal, counter-balancing and randomization had also been used according to the requirement. The tools for data collection were lists meaningful and non-meaningful. The sample consisted of 320 students of Class VIII, which included both boys and girls. They ranged in age from 13 to 15 years. Then the main sample was divided into two groups. One group learnt non-meaningful list 1, and the second learnt meaningful list 1. Again, they were divided into eight subgroups each, as per requirement of the design. These subgroups had been tested for homogeneity among them through analysis of variance for meaningful and non-meaningful list 1, separately. To analyse the multivariate complex of independent variables, four-way analysis of variance was done. In order to see when retroactive inhibition was greater than proactive inhibition and when it was vice-versa, corresponding t-ratios were computed.

The main findings were: (i) Retroactive and proactive inhibitions were real phenomena; they did differ also. (ii) Retroactive inhibition was greater than proactive inhibition in general, but specifically when both the lists were similar or the second was stronger (greater associative strength). Proactive inhibition was greater only when prior list was having greater associative strength. (iii) Non-meaningful learning suffered from retroactive inhibition as well as proactive inhibition, whereas meaningful learning was resistant to such adverse effects, rather it was inhibitory, retroactively as well as proactively. (iv) New learning was crucial in both the sets. (v) Set was important in both the sets, inhibitions being greater under task-nonawareness level. (vi) The relative importance of different variables was not the same in

both the sets. (vii) Retroactive inhibition was more complex than proactive inhibition.

456. EMBAR, P., *Psychometric and Experimental Investigation of Social, Emotional and Learning Problems of Mentally Retarded Children*, Ph.D. Psy., Ban. U., 1973

The aim of the study was: (i) to find out the possibility of improvement in the trainable mentally retarded children by instituting a special training programme, and (ii) to find out whether institutionalized training was more beneficial than non-institutionalized training.

The study was an experimental one. At the time of the final assessment, the sample in the experimental groups (I and V) happened to be thirteen and ten (initially, fifteen and twenty-five) trainable mentally retarded children (I.Q. 25 to 50). Each of these experimental groups (I and V) was matched with a mentally retarded control group (II and VI, respectively), a normal chronological age control group (III and VII, respectively), and a normal mental age control group (IV and VIII, respectively). The experimental group I was given institutionalized training. The children of experimental group V were given facilities to attend the special school as day scholars. The duration of training was one academic year (ten months). The programme, in general, covered the areas of general behaviour and sense training, play activities, manipulative activities, general knowledge and drama and music. Pre- and post-testing was conducted in the areas of intelligence, social development, and behavioural and emotional problems by using the Binet-Kamath Test and the Seguin Form Board Test, the Vineland Social Maturity Scale (modified by Malin for Indian conditions), and the Sula Wolff's Behaviour Inventory, respectively. The t-test and the chi-square test were used to analyse the data.

The major findings of the study were: (i) The children of group I showed significant improvement in social development. They showed significantly less number of emotional and behavioural problems. The gain shown in their mental ages was not significant. (ii) Group V also showed an improvement in social development, behavioural and emotional aspects and mental ages, though the improvement was not significant. (iii) A training programme adjusted to the level of the trainable mentally retarded child benefited him in learning and in better social, emotional and behavioural adjustment.

457. GAKHAR, S.C., *Identification of Variables of*

*Educational Environment as related to the Acquisition of Mathematical Concepts at the Junior Secondary Stage*, Ph.D. Edu., Pan. U., 1981

The study was advanced within the framework of different hypotheses related to the variables of student, home, teacher, school structure, school characteristics and multivariate analysis.

The samples for the study comprised 510 Grade VIII students (352 boys and 158 girls), drawn from different types of schools, viz., boys, girls, coeducational, government, private, urban, and rural, selected from the Union Territory of Chandigarh. Schools were chosen by a combination of both random and purposive sampling, and students were selected by multi-staged stratified randomization. The tools used for collecting data were Raven's Standard Progressive Matrices, Jalota Group Test of General Mental Ability, Numerical Ability Test, Algebraic Concept Test by Joshi, Geometric Concept Test developed and standardized by the investigator, SES Scale by Trivedi and Udai Pareek, Teacher Attitude Scale, student, teacher, and school information proformas, all prepared by the investigator, and School Characteristics Index by Pritam Singh. Descriptive statistics, namely, mean, median, standard deviation, skewness and kurtosis, were calculated to ascertain the nature of score distributions of different variables. In addition, correlation matrix, factor analysis, regression equations, analysis of variance, and t-ratios were used for different purposes.

The major findings of the study were: (i) Intelligence was significantly and positively related with the acquisition of mathematical concepts individually and in unique constellation with other variables. (ii) Certain variables, namely, devoting more time to study mathematics, having the advantages of additional help, participation in cocurricular activities, interest in mathematics, and sex, did not significantly influence the acquisition of mathematical concepts by the students. (iii) The SES of the parents was significantly correlated with the students' performance on mathematical concept (MC) test. (iv) Father's income and parents' education had positive effect, whereas father's presence or absence, the size of the family, the ordinal position of the child in the family, the effect of working/non-working mother, and encouragement given by the parents, had no effect on the acquisition of mathematical concepts. (v) Teachers' variables relating to their qualifications, class-size, encouragement given by the head to the teacher, the use of the audiovisual aids, feedback, and total attitude score of the teacher or seven sub-dimensions of teacher attitude

scale were found to be significantly influencing students' performance on MC tests. (vi) Large-size private boys' schools, private coeducational schools, and lesser teacher-pupil ratio, were positively related with the acquisition of mathematical concepts. (vii) The press of teaching methods and student-teacher interaction in the classroom and the press of school traditions were found to be good predictors of better performance in mathematics. However, curriculum press, the press of rules, regulations and policies of the school and the press of curricular activities had no relation with the achievement in mathematics. (viii) In multivariate analysis, the variables of student, home, and school environment conjointly contributed greater variance than their contributions independently.

**458. GOEL, S.K.,** *An Investigation of Von Restorff Phenomenon in Serial Learning among Mental Retardates*, Ph.D. Psy., Del. U., 1978

The hypotheses of the study were: (i) To see whether isolating an item in the list will facilitate the learning of the isolated item. (ii) To see whether the list having an isolated item will take less trials to learn and less errors will be made than in the case of the control list. (iii) To see whether an isolated item will be recalled more in the first half of the list than in the second half. (iv) To see whether the nature of the classical serial position curve could be changed through the introduction of isolation in the middle part of the list. (v) To see whether the effect of isolation is reduced when the magnitude of isolation is increased. (vi) To see whether the effect of isolation in the middle of the list will have marked facilitation on learning than in the peripheral positions. (vii) To see whether the effect of isolation is reduced when the degree of isolation is decreased.

A sample of sixty mentally retarded children was selected from three schools of Delhi. Initially, SFB (Seguin Form Board Test) and DAM tests were administered to ninety-five children and a total of sixty children were selected for the intellectual assessment on various psychological tests. The other tests were CPM (Coloured Progressive Matrices), PPVT (Peabody Picture Vocabulary Test), S-BT (Stanford-Binet Test), VSMS (Vineland Social Maturity Scale). The sample consisted of thirty-three boys and twenty-seven girls. The age ranged from 10 years to 18 years 10 months. These children belonged to three categories of retardation, i.e., mildly retarded, moderately retarded and severely retarded. Their IQs ranged from 31 to 67 and SQs ranged

from 40 to 93. After having selected a pool of sixty, Ss, seven experiments were conducted altogether. The number of Ss varied in each experiment, the nature of stimuli was English alphabet in all experiments except the last two experiments in which geometrical shapes were used as stimuli. The length of stimulus list was ten items in all experiments except one experiment which contained only nine items. The criterion for matching Ss in different conditions was on the basis of IQ (S-B) SQ (VSMS), CA and MDS. Each stimulus item was exposed for two seconds. The criterion of learning the stimulus list was to successive errorless reproductions. In experiments 1, 3A, 3B, 5A and 5B cross-over design with two conditions (control and experimental) each time was used. In Experiment 2, simple analysis of variance design with four conditions was used, followed by Tukey's Test.

The major findings were: (i) Isolation introduced in just past the middle position facilitated the overall learning of the list. (ii) Isolation introduced in the middle position facilitated the overall learning of the list. (iii) Powerful isolation introduced in the two control positions facilitated the overall learning of the list. (iv) The effect of Von Restorff Phenomenon was reduced when the magnitude and degree of isolation was decreased. (v) When the isolation was introduced in the two central positions, the facilitation effect was confined to the isolation items only. (vi) In Experiments 1 and 2 the errors at the sixth position in the experimental conditions were significantly fewer than those at the corresponding position in the control condition. There was also an advantage for adjacent items of the fifth and seventh positions. The errors at 5th and 6th positions in  $E_2$  condition were significantly fewer than those at the corresponding positions in the control condition and there was a slight advantage for the item which followed the isolated item and not for the item which preceded the isolated item. (vii) In Experiment 4, the errors at the isolated position 5 in  $E_2$  condition were significantly fewer than the corresponding position in the control condition and there was also an advantage for the items which followed the isolated item and not for the item which preceded it. Isolation introduced at the second and eighth positions did not bring any facilitation because primary and recency factors were operating here. (viii) In Experiments 1, 2 and 4 where only one item was isolated, it was found that the isolation introduced at the sixth position (i.e., just past the middle) was the most effective position for overall facilitation of learning. (ix) in Experiment 5A, the errors at isolated positions in  $E_1$  condition were significantly fewer than the corresponding positions in the con-

control condition and there was also an advantage for the adjacent items but in Experiment 5B, the facilitation items and not to the adjacent items. (x) The nature of the classical bow-shaped serial position curves could be changed by manipulating the factor of isolation in just past the middle position (Experiments 1 and 2) and one or two central positions (Experiments 2,4,5A and 5B). All the percentage serial position curves became almost similar in nature and overlapped to some extent in each experiment, a finding which corroborates the McCrary-Hunter hypothesis. (xi) The order of retrieval of items was favoured due to isolation introduced in E, E<sub>1</sub>, E<sub>2</sub>, E<sub>3</sub>, E<sub>4</sub> and E<sub>5</sub> conditions (Experiments 1,2,5A and 5B). The order of retrieval also favoured due to isolation introduced in E<sub>2</sub> condition (Experiment 4) and E<sub>1</sub> and E<sub>2</sub> conditions (Experiments 5A and 5B). Facilitation effect on the order of retrieval of items was relatively more prominent during the earlier phases of learning in the experimental conditions.

**459. GONSALVES, M.M.,** *Discrimination of Forms by Normal and Mentally Retarded Children: a Comparative Study*, Ph.D. Psy., Del. U., 1978

The hypotheses of the study were: (i) Programming is an effective measure for successful learning performance. (ii) Under stimulating conditions and under hypnotizing influence of attention-getting attributes of stimulus dimensions, both retarded and normal children of the same MA perform in a similar or very nearly similar manner in a programmed learning situation. (iii) Where discrimination is not programmed, the performance of the mentally retarded children is slower than that of normal children of the same MA. (iv) The performance of retardates will vary under different programming techniques.

In order to test these hypotheses, two types of experiments, using the Uni and Dual programming techniques, were conducted. Under the Uni programming technique, Experiments Ia, Ib, IIa, IIb, IIIa, IIIb and IV were conducted. In Experiment Ia eighteen retarded boys and girls were grouped as high, intermediate and low groups. In Experiment Ib, twelve retarded boys and girls were equally grouped as high and low. In Experiment IIa, the low group of six retarded individuals of Experiment Ib served as the low group, and the high group of six individuals of Experiment Ia served as the high group. In Experiment IIb, twelve normal children were equally divided into the high and low groups. In Experiment IIIa, the low group of Experiment Ia and

the high group of Ib served as the low and high groups, respectively. In Experiment IIIb, a fresh group of twelve normal children was equally divided into high and low groups. The subjects for experiment IV comprised twelve retarded and twelve normal individuals who acted as the control group. The normal subjects were matched for CA, MA and RPM to equate them with their counterparts. Under the Dual programming, Experiments V and VI were carried out. In Experiment V, six retarded children who constituted the intermediate group for Experiment Ia were made to perform again in this experiment. In Experiment VI, thirty-six retarded children who participated as subjects of the high, low and control groups in the previous experiments were reshuffled and then fourteen were selected and equally divided to form the high and low groups. These were also matched for CA, MA, and RPM to equate them with the high and low groups of the earlier experiments. The intermediate groups that took part in Experiments Ia and V remained the same. The following four processes were used to conduct the experiments under Uni programming: (i) Background fading-in process, (ii) Within-stimulus fading-in process, (iii) Fading-in process on the horizontal arm of the flag form (for retarded and normals), and (iv) Fading-in process on the vertical stem of the flag form (for retarded and normals). The two experiments conducted under the Dual programming used the modified Uni programming technique and fading-in process on the wing of WINGED-L form, respectively.

The major findings were: (i) Programming was an effective measure in teaching retarded subjects to discriminate between forms and all the subjects were successful in achieving the learning criteria. (ii) Responses of retardates were consistent enough to be measured. (iii) High, intermediate and low groups of normal and retarded children tended to exhibit uniformity in responses. (iv) The retarded children's performances indicated no learning deficits. (v) Incentive conditions exerted influence on the performance of retarded children. However, all the groups learned well under appropriate reinforcing conditions. (vi) Knowledge of results was beneficial and the more promptly the knowledge was received the better was the learning. (vii) The retarded children progressed through the discrimination problem at a rapid rate.

**460. GOSWAMI, N.,** *Adjustment Problems of School-going Adolescent Girls and the Development of an Adjustment Inventory for Their Measurement*, Ph.D. Edu., Gau. U., 1980



The major objectives of the investigation were: (i) to study adjustment problems of urban adolescent girls, and (ii) to construct a valid and reliable measure for assessing the personal adjustment of adolescent girls along with its norms.

Problems, as experienced by adolescent girls were collected from a batch of girl students of Gauhati. Based upon the stated problems the preliminary draft of the inventory, consisting of 232 items, was constructed and then tried out on a representative sample of 370 girls. Item analysis was done by computing only the index of item discrimination. Before finalizing the draft an inter-correlation analysis was undertaken to find out the amount of overlapping among the different areas. In all, 100 items were selected in the final form of the inventory, covering five areas of adjustment, viz., home, school and study, social, religious and moral, emotional and mental, and physical and sexual. As many as ten high and one higher secondary girls' schools out of twelve high and one higher secondary girls' school in Greater Gauhati area were selected and the inventory administered to the entire population (N = 2481) of Classes VIII (N = 846), IX (N = 856) and X (N = 779) of the eleven schools.

The reliability coefficients obtained by test-retest and split-half methods were found to range from 0.82 to 0.94. The content validity was established. The empirical validity was obtained by correlating the inventory scores with the Adjustment Inventory for School Students (Sinha and Singh) and also with teachers' rating. The obtained validity coefficients were found to range from 0.73 to 0.75 in the former case and 0.56 to 0.59 in the latter.

The major findings were: (i) The distribution of scores of the standardization sample was found to be approximately normal. (ii) The number of problems increased with age. (iii) Analysis of results showed that the differences between the means of Classes VIII and IX and Classes VIII and X were significant at one per cent level but the difference between the means of Classes IX and X was not significant. (iv) The adolescent girls encountered maximum number of problems in the emotional and mental areas followed by the problems in the school and study and home areas. The physical and sexual was the least problem-encountering area. (v) Classwise analysis of the problems revealed that the girls of Class VIII encountered maximum number of problems in the areas of home and school and study followed by emotional and mental areas. The social, religious and moral and the physical and sexual areas took the fourth and fifth positions, respectively. (vi) In Classes IX and X

the emotional and mental and the school and study were the most problematic areas followed by home, social, religious and moral and physical and sexual areas.

**461.** GUPTA, A., *Psychological Stress related to Level of Aspiration and Achievement Motivation*, Ph.D. Psy., RSU, 1979

The objectives of the study were: (i) to find out the relationship between psychological stress and achievement motivation, educational aspiration and occupational aspiration, and (ii) to find out the differences in the psychological stress of studies belonging to different age levels, sex, educational experiences, academic streams, socio-economic status groups, castes and residential backgrounds.

The sample of the study consisted of randomly selected 310 students studying in postgraduate classes under the different disciplines of Ravishankar University and 370 students of Grade XI in various higher secondary schools of Raipur district. The tools employed in the study were Mehta's Achievement Motivation Inventory, the Educational Aspiration Scale (Sharma and Gupta), the Occupational Aspiration Scale (Grewal), Frustration Test (Chauhan and Tiwari), Comprehensive Anxiety Scale (Sinha and Sharma), the motor behaviour reaction scale constructed by the investigator, and the electro-physiological measures, as measured by the EEG, EKG, and EMG techniques. The data were analysed using the tests product moment coefficients of correlation, and the psycho-graphs on EEG, EKG and EMG of all the eighth categories and their technical analysis and interpretation.

The findings of the study were: (i) There existed significantly high positive relationship between psychological stress and the various independent variables, namely, achievement motivation, educational aspiration and the occupational aspiration; all these inter-relationships were linear. (ii) All the three extreme groups, i.e., high achievement motivation, high educational aspiration and high occupational aspiration groups, were under the greatest psychological stress while the low achievement motivation, low educational aspiration and low occupational aspiration groups, the least. (iii) Achievement motivation was found to be the most potential independent variable determining the limits of psychological stress. Psychological stress was observed to be independent of the effect of sex so far as fixation, resignation, anxiety, global frustration and global psychological stress were concerned; whereas the females excelled the males in mean scores on regression,

the males outscored the females on aggression and motor behaviour reactions. (iv) The developmental academic career of pupils witnessed a sequential growth of psychological stress on all of its parameters under study. (v) Students studying in postgraduate classes significantly outscored the students in Grade XI on all measures of psychological stress; students offering science and arts as their academic streams did not differ significantly on any of the measures of psychological stress except anxiety wherein the arts students scored significantly higher than the science students. (vi) Socio-economic status was a potent factor contributing to the generation of psychological stress. (vii) Psychological stress was found to be independent of caste hierarchy. (viii) The differences between the means of the urban and the rural students on psychological stress were found to be highly significant, favouring the former; the urban students outscored the tribal students also, except for global psychological stress. Except for fixation and motor behaviour reactions, the rural students had a significantly higher mean score than the tribal students.

462. GUPTA, A.K., *A Factorial Study of Verbal and Non-Creativity, Intelligence and Socio-economic Status*, Model Institute of Education and Research, Jammu, 1980 (ICSSR-financed)

The objectives of the study were: (i) to factor analyse the scores on different dimensions of creativity (both verbal and non-verbal), on intelligence and socio-economic status, (ii) to find out whether the constructs of creativity, intelligence and socio-economic status had any common underlying factors, and (iii) to ascertain whether verbal creativity and non-verbal creativity were two separate dimensions in the sub-structure of creativity or not.

The tools used were the verbal and non-verbal batteries of MIER Tests of Creativity, Group Test of General Mental Ability (Jalota, Hindi) and Socio-Economic Status Scale, Form B (Urban, Kuppuswamy). The principle component method of Hotelling was used for analysis. The variables selected for factor analysis as regards verbal and non-verbal creativity were verbal fluency, verbal flexibility, verbal originality, verbal transformation, verbal inventiveness, non-verbal fluency, non-verbal flexibility, non-verbal originality, non-verbal elaboration, non-verbal productive designing ability, non-verbal novelty and non-verbal complexity along with intelligence and socio-economic status.

The findings of the study were: (i) As a result of factor

analysis the factors identified fell into three categories. (ii) The factors pertaining to verbal creativity comprised Factors I and II, comprising fluency, flexibility, originality and inventiveness and covered verbal creativity. (iii) The two independent factors identified, Factors II and III, involved fluency, flexibility, originality complexity productive designing ability, novelty and elaboration; these belonged to the domain of non-verbal creativity. (iv) A socio-economic status linked factor comprised mainly intelligence and, to a lesser extent, non-verbal novelty. (v) Creativity, whether verbal or non-verbal, was independent of intelligence and socio-economic status. (vi) There was no evidence of common factors among intelligence, socio-economic status and creativity, which were independent domains.

463. GUPTA, A.K., *Study of Parental Preferences in relation to Adolescents' Personality Adjustment and Achievement*, Model Institute of Education and Research, Jammu, 1981 (NCERT-financed)

The study aimed at developing a Parental Preference Inventory related to educational, emotional, social, moral, physical and vocational preferences for analysing the relationship of parental preferences with adolescents' adjustment, personality, achievement and children's education at home and school.

Through purposive sampling, 3,404 cases were involved at one stage or other of the study. Patterns of parental preferences were identified by the Parental Preference Inventory (PPI) prepared by the investigator. The Hindi version of Junior-Senior High School Personality Questionnaire of Kapoor and Mehrotra was used along with Singh's Adolescent Personality Inventory and Saxena's Adjustment Inventory. The test-retest reliability of the PPI ranged between 0.42 and 0.67 and the split-half reliability between 0.29 and 0.67 for different dimensions of parental preferences. As regards content validation, the factorial validity ranged from 0.426 to 0.888 and could discriminate different levels of ability.

The findings of the study were: (i) Parents as a group tended to show varying parental preferences in different spheres while some tended to exist as core preferences; these preferences were primarily focussed on higher academic achievement followed by the physical and social fields and tended to neglect influences of tradition, culture and Indian social norms. (ii) While adolescents from joint families tended to exhibit significantly better educational, social and health adjustment, emotional adjustment and home adjustment were independent of

family type. A higher desirability of parental preferences in the social field resulted in better educational adjustment. (iii) Though achievement was a function of socio-economic status, it was independent of family size and type. (iv) An inverse relationship existed between the desirability of parental preferences and the achievement of adolescents. (v) While no single effect was found to be strong enough to cause delinquency, the tendency was manifest more among adolescents of extreme achievement groups. Low desirability of parental preferences resulted in significantly higher delinquency among average achievers. Those with low levels of achievement and adjustment were significantly more delinquent even when their parents had high and average desirability of parental preferences. (vi) Creativity was manifest significantly more among those with poor and average achievement. (vii) Students with poor achievement were more creative when desirability of parental preferences was of average level. Students with high and average adjustment were significantly more creative. (viii) Obedience as a personality trait was related with high desirability of parental preferences while assertiveness was related with low level of desirability of parental preferences. (ix) Low desirability of parental preferences resulted in expedience, evasion of rules, lesser ego integration. (x) Low desirability levels of parental preferences in the moral and emotional fields tended to make adolescents, particularly girls, group dependent. (xi) The desirability of parental preferences was positively related to the socio-economic status.

464. GUPTA, J.P., *A Study of Anxiety and Achievement Motivation in relation to Academic Achievement, Sex and Economic Status*, Ph.D. Edu., Luc. U., 1978

The purpose of the investigation was to explore the realms of anxiety and achievement motivation and to find out the relationship between them with respect to sex, academic achievement and economic status. The sample consisted of 360 students (180 boys and 180 girls) randomly drawn from Classes IX and X. Personality Inventory by Dutta was used for the assessment of anxiety and Sentence Completion Test by Mukherjee was used for the measurement of achievement motivation.

The main findings of the study were: (i) The low anxiety group had higher mean achievement motivation than the high anxiety group but the differences were not statistically significant. (ii) Girls were significantly more anxious than boys. (iii) Boys were more achievement

motivated than girls. (iv) In the case of boys there was negative relationship between anxiety and achievement motivation. (v) Students from higher socio-economic classes showed lower level of anxiety. (vi) Students having higher academic achievement showed lower level of anxiety. (vii) Correlation between anxiety and achievement motivation in the case of all the groups having low academic achievements was negative irrespective of socio-economic status. (viii) In the case of groups belonging to low economic status but having upper academic achievement, correlation between anxiety and achievement motivation was negative. (ix) In the case of groups belonging to low economic status and having middle academic achievement, correlation between anxiety and achievement motivation was positive.

465. GUPTA, K.L., *Individual Differences in Value Pattern and Personality Type of the School-going Adolescents of Eastern U.P.*, Ph.D. Edu., Gor. U., 1977

The objectives of the investigation were: (i) to study the value pattern of boys and girls in general, and to find out the differences among rural-urban groups, (ii) to study the typological structure of the personality of school-going adolescents and to discover the differences among the mentioned groups, and (iii) to study the general mental abilities of boys and girls.

In all, 400 boys and 400 girls, of whom 200 each were from rural and urban secondary schools of Eastern U.P., constituted the sample. They were administered Joshi's General Mental Ability Test, and the Typological Structure Test developed by Dwivedi on the lines of Sheldon's classification of personality. The t-test was used for analysis of data.

The major findings of the study were: (i) Significant difference at 0.01 level was found in the intelligence of boys and girls, with boys having higher intelligence. Rural-urban location was not found related to intelligence. (ii) On the endomorph-viscerotonia classification the girls scored significantly higher than the boys exhibiting higher endomorphism. (iii) Similarly, the urban girls were more endomorphic than the rural girls. (iv) Boys were found to be significantly more mesomorphic than girls, while the location was not related to mesomorphic tendency. (v) The rural girls were more ectomorphic than the urban girls. (vi) Boys and girls differed significantly in their values.

466. GUPTA, M., *The Problems of Urban Adolescent*

*Girls and Their Effect on Paired Associate Learning*, Ph.D. Psy., Luc., 1981

The objectives of the study were: (i) to see whether or not adolescence was a difficult period of adjustment for urban adolescent girls in India, (ii) to identify the pattern of problems of these adolescent girls, and (iii) to see the effect of adolescent problems on paired associate (PA) learning.

A sample of 500 urban adolescent girls ranging between fourteen and eighteen years of age was randomly selected from five Hindi-medium colleges in Lucknow City. An Indian adaptation of Money Problem Check List to which quantitative dimension was added by the researcher, was administered to the sample. According to the results of the adaptation of the Money Problem Check List, the highest 15 per cent and the lowest 15 per cent of the subjects were selected for further study. The criterion groups (HP and LP) were administered the Porteus Maze Test and were run into a competitive PA learning situation. Mean, standard deviation, significance of mean difference, percentage, correlation, chi-square and z-scores were used to explore the relationship between various variables.

The findings were: (i) Adolescence was rather a calm phase of development in India. (ii) Individual differences in adolescent problems were observed. More than average problems were experienced by 17 per cent girls in different areas of life. Sixty-eight per cent of adolescent girls had an average problem level, whereas there were about 14.8 per cent of adolescent girls having a problem level that was below average. (iii) All adolescent girls marked some problems in different spheres of their lives. (iv) Problem-span, problem-intensity and problem-level were three interrelated aspects of the adolescent's psychological world. (v) Adolescent girls had a maximum number of difficulties in areas like social, school, and personal psychological relations areas while a minimum number of difficulties were experienced in the area of courtship, sex and marriage. (vi) There was a positive relationship and interaction between different areas of adolescent adjustment, showing that the areas were not independent segments of adolescent's personality. (vii) Five problems highest on the problem level were: taking everything too seriously, wanting to improve culturally, wanting a more pleasing personality, wanting to improve etiquette and parents sacrificing too much for them. (viii) Five problems lowest on the problem level were; parents divorced or living separately, bad posture, speech defects, working late at night, and difficulty in hearing. (ix) Late adolescent girls

had a lower span and higher intensity and higher level of problems than the early ones. (x) The areas of concern for early adolescent girls were social recreational activities and school, while for late adolescent girls they were social recreational activities and personal psychological relations. The only area on which the two groups significantly differed was the personal psychological relations area. (xi) Adolescent problems were observed having adverse effect on the learning of competitive paired associations. (xii) Adolescent problems in different areas were inversely but not significantly related to PA learning, showing that the interaction of all the problem areas was more important a determining factor of PA learning than problems in any specific area. (xiii) Delinquent tendencies were observed having detrimental effect on PA learning, showing that destructive tendencies in the adolescent girls might inhibit their constructive attempts.

467. GUPTA, S., *Impact of Vocational Training in Behaviour Modification of Adolescents*, Ph.D. Psy., Raj. U., 1978

The study was designed to ascertain the impact of learning procedures (reinforcement) on vocational training. It also attempted to evaluate the impact of vocational training on attitudes towards work and improvement effected in work performance.

In all, 120 boys were selected from Standard IX of Mahatma Gandhi Higher Secondary School, Kotah. A General Attitude Scale (G.A.S.) towards work values was prepared in Hindi with sixty questions. The test-retest reliability and split-half reliability were 0.57 and 0.62, respectively. A trainee questionnaire of fifteen items was prepared to find out the effect of orientation proforma towards work on the work values and training programme. A schedule of verbal reinforcement was prepared to be administered on trainees. A work orientation proforma on the significance of vocational training was prepared. Forty boys each were grouped in three groups, namely, training with reinforcement, training without reinforcement, and no training group. A General Aptitude Scale Questionnaire was administered to all the 120 boys without any orientation regarding study in groups. Second day a trainee questionnaire was administered to them and after that they went through the orientation proforma. The questionnaire was again administered to them to find out if any change was brought about the orientation questionnaire. The training group with reinforcement and the training group without rein-

forcement were observed and assessed during the one month training period regarding the work values — punctuality, precision, concentration and completion. Appreciative and encouraging words of praise were given to the training group without reinforcement. Analysis of the data was made by graphical presentation and statistical methods.

The study gave the following findings: (i) Those who had positively high attitude towards work values and training, had also scored high in performance, whereas those having low scores did not show that degree of superior performance. (ii) Trainees' performance in punctuality and completion was more marked than in precision and concentration. (iii) The training alone led to positive improvement, which was much higher in the case of reinforcement with training group. (iv) There was a positive high response of appreciation towards work and vocational training. (v) Trainees did not realize the importance of vocational training. (vi) The effect of training with reinforcement was more pronounced in the case of punctuality and completion than in the case of precision and concentration.

468. GUPTA, S., *Role of Organizing Strategies, Methods of Presentation and Individual Differences on Short-Term Retention*, Ph.D. Psy., BHU., 1978

The study attempted to find out: (i) the differential role of different modes of presentation with the stimulus materials of different item length and meaningfulness and the organizing strategies uncontaminated by orienting instructions, and (ii) the nature of retention score in relation to study habits attitude and certain personality variables such as introversion-extraversion and neuroticism stability.

Seven hypotheses were formulated in relation to these variables. The total sample consisted of 640 students (320 male and 320 female) of Classes XI and XII, randomly selected from fourteen urban academic institutions of Bareilly, Lucknow, Moradabad and Varanasi. The Ss of an institution were equally distributed to each of the sixteen experimental conditions and within a block of sixteen students one of whom worked under the same condition. The study was based on a  $2 \times 2 \times 4$  factorial randomized experimental group design with repeated measures on the last factor with three-way classification of variables. The factors with their levels were two levels of sense modalities (auditory and visual), male and female subjects, and four levels of meaningful-

ness (low and high meaningful CVC trigrams and low and high meaningful dissyllables). Eight lists, each comprising twelve paired unrelated words, were prepared. There were four lists of CVC trigrams (two each with high and low levels of meaningfulness) and four lists of six-lettered dissyllables (two each with high and low levels of meaningfulness). A tape recorder was used for auditory mode of presentation of the stimulus lists. The Hindi adaptation of Study Habits and Attitude Test (Joshi) and Hindi version of Maudsley Personality Inventory were used for studying the role of individual differences on retention performance. Mann-Whitney U test, t-test, analysis of variance and product moment correlation were used for analysing the data.

The main findings of the study were: (i) There was no significant difference in the retention performance of male and female subjects irrespective of different order, mode of presentation and levels of meaningfulness. (ii) The visual mode of presentation, was found significantly better for retention than auditory mode of presentation. (iii) High meaningful CVS's evinced better retention than low meaningful ones, high CVS's showed the highest mean retention. (iv) The high level organizing strategies had higher correlation with the retention scores than that obtained by the low level organizing strategies. (v) There was low correlation between study habit and attitude scores and retention scores with different indices for the male and the female subjects. (vi) High scores on extraversion-introversion exhibited low positive correlation and low scores exhibited low negative correlation with retention scores. (vii) The extreme scores on Neuroticism Stability Scale did not yield different correlation with retention scores.

469. GUPTA, V.K., *Acquisition of Efficiency in Two Psycho-motor Tasks as a Function of Frequency of Knowledge of Results, Intelligence, and Motivation*, Ph.D. Psy., Pan. U., 1978

The major hypotheses of the study were: (i) Knowledge of results (KR) would consistently improve the performance on psychomotor tasks, and the higher frequency of KR would yield higher performance improvement, (ii) a low intelligence group would perform better when the performance was coupled with KR. (iii) high motivation coupled with KR would result in superior performance, (iv) acquisition of efficiency would be more in the case of a complex task such as weight estimation than in a comparatively simpler task such as line drawing, and (v) females would be performing better

than males on the psychomotor task of line drawing and weight estimation.

The study tried to see the effect of frequency of knowledge of results, intelligence, induced motivation, and sex differences upon acquisition of efficiency in psychomotor tasks. A  $4 \times 2 \times 2 \times 2$  factorial design was used. There were four frequencies of KR — 100 per cent, 75 per cent, 50 per cent and 25 per cent; two levels of intelligence—high and low; and two of motivation — high and low. The sample for the study comprised 320 undergraduate students (160 male and 160 female) of Pt. Jawaharlal Nehru Government College, Faridabad (Haryana), selected on the basis of their scores on Raven's Standard Progressive Matrices. Line drawing and weight estimation tasks evolved by Mohan and others were used for gauging the performance level. Acquisition rates were computed by subtracting the mean discrepancies of the last three trials of the acquisition series from the mean discrepancies of the last three trials of the initial series, multiplying these by a constant 100/10 in the case of line drawing and 100/40 in the case of weight estimation. Analysis of variance was used to analyse the data.

The major findings of the study were: (i) On the variable of frequency of KR, the results failed to reach any level of significance. (ii) Differences between the performance level of the various frequencies of KR were significant. (iii) The performance of the 100 per cent KR group was the best, followed by the 75 per cent KR group, 50 per cent KR group, and 25 per cent KR group on both the tasks. (iv) The low intelligence group performed better on both the tasks than the high intelligence group. (v) Similarly, the low motivation group performed better than the high motivation group. (vi) The females performed better than the males on the psychomotor task of line drawing, whereas the acquisition rates on the performance of weight estimation favoured the males. (vii) Some of the interactions were also significant which were discussed in terms of KR, intelligence, and sex differences.

**470.** HUSSAIN, M.G., *Recall of Finished and Interrupted Tasks under Ego- and Task-oriented Conditions in relation to Anxiety, Need Achievement and Need for Approval Motive as Personality Variables*, Ph.D. Psy., Bih. U., 1979

The hypotheses of the study were: (i) The high anxious subjects would show better recall of interrupted tasks (I/T) under the condition of task-orientation and

better recall of completed task under ego-oriented condition; the low anxious subjects would show better recall of completed task (C/T) under task-orientation condition and better recall of I/T under ego-orientation condition, (ii) the high n-Achievers would recall I/T better under task-oriented condition and C/T better under ego-oriented condition; the low n-Achievers would show better recall of I/T under ego-oriented condition and better recall of C/T under task-oriented condition, and (iii) the subjects high in approval motive would recall I/T better under task-oriented condition and C/T better under ego-oriented condition and the subjects low in approval motive would show the opposite result.

Sinha's Anxiety Scale, Sentence Completion Test by Mukherji and Edward's Social Desirability Test were administered on a sample of 1,000 postgraduate and undergraduate students of different colleges of Bihar University. Three personality variables, namely, anxiety, n-Achievement and need for approval motive, were studied in their high and low levels (above 75th percentile as the high and below 25th percentile as the low level). The subjects, whose age ranged between 18 and 22 years, were divided into six groups of thirty-two subjects who were high or low in one variable and between  $Q_1$  and  $Q_3$  in the other two variables. Each group was then subdivided into two work under task- and ego-oriented conditions. To analyse the data, analysis of variance and t-test were used.

The major findings were: (i) The high anxiety (HA) group differed significantly from the low anxiety (LA) group under ego-oriented conditions. The LA group recalled I/T better while the HA group preferred completed tasks. (ii) Both the HA and the LA groups differed significantly in their recall of C/I under task-oriented conditions. The LA group recalled C/T better while the HA group recalled I/T better. (iii) The low n-Achievement (LnAch) group differed significantly from high n-Achievement (HnAch) group in the recall of C/I tasks under ego-oriented conditions. The LnAch group recalled C/T better while HnAch group recalled I/T better. (iv) Both the HnAch and the Ln Ach groups differed significantly in their recall of C/I tasks under task-oriented conditions. The LnAch group recalled I/T better while the HnAch group recalled C/T better. (v) Both the high and the low approval (HAPP and LAPP) groups differed significantly in their recall of C/I tasks under ego-oriented conditions. The LAPP group recalled I/T better while the HAPP group recalled C/T better. (vi) Both the LAPP and the HAPP groups differed significantly in their recall of C/I tasks under task-oriented conditions. The LAPP group recalled C/T better while

the HAPP group recalled I/T better.

471. HUSSAIN, M.Q., *Personality Adjustment Factors Discriminating between Criminals and Normals during Adolescence*, Ph.D. Psy., AMU, 1963

The aims of the investigation were: (i) to study the personality factors present in the normals and the criminals, and (ii) to study the variation of those factors in the normals and the criminals in the context of environmental factors, such as sex, age, etc.

Two groups, one comprising 150 normal college students and the other 150 criminals aged around eighteen to twenty-one, comprised the sample of the study. External variables, namely, locality, home, religion, income and age, were included in the process of sampling the normals and the criminals. The Bernreuter Personality Inventory was used in the study. The t-test was used to analyse the data.

The findings were: (i) Factors such as locality, home, income, religion and age influenced personality and adjustment of subjects. (ii) On personality scales, the tendency of the normals was to rate higher than the criminals except on two variables, namely, age and locality (urban), where the criminals rated higher; on the adjustment scales the tendency of the criminals was to rate higher than the normals except in all the five external factors of R6-V Scale where the normals rated higher than the criminals. (iii) On the adjustment scales, the criminals rated higher than the normals, 74.4 per cent of the time, while the normals rated higher, 25.6 per cent of the time.

472. JABBAL, K.J., *A Study of the Development of Mathematical Concepts in School-going Children*, Ph.D. Edu., Gor. U., 1981

The main purpose of this investigation was to study which of the mathematical concepts were easily formed in the children of Class VI. The mathematical concepts and generalizations, the formation of which were studied, were thought to be essential for learning mathematics in Class VI and onwards. The effect of intelligence, sex, locality and age difference on the development of mathematical concepts was also seen. The Group Test for Intelligence by Tandon was adapted and a test for observing mathematical concept formation was constructed by the researcher. Three hundred boys and 250 girls from institutions situated in rural and urban

areas were chosen by the stratified cluster sampling technique.

A  $2 \times 2 \times 2$  factorial analysis design was prepared to check the effect of sex, locality and age on mathematical concept formation, and the correlation coefficient was computed to see the relationship of intelligence mathematical concept formation.

The results of the analysis were: (i) Correlation coefficient between intelligence and mathematical concept formation was 0.90. (ii) F-ratios revealed that sex had no effect on mathematical concept formation. (iii) Locality and age were found to have significant effect on concept formation. Students senior in age secured better marks. The effect of double and triple interaction was not found to be significant.

473. JACHUCK, K., *Level I-Level II Abilities of Socially Disadvantaged Children: Effects of Age, Sex and Caste*, Ph.D. Psy., Utkal U., 1978

The investigation was planned with the following purposes: (i) to compare the cognitive structure of socially disadvantaged and advantaged children taken from different SES and caste groups, particularly with regard to Jensen's Level I and Level II abilities, and (ii) to find out if the growth of Level I and Level II abilities among these sub-cultural groups followed the prediction of Jensen's theory. The hypotheses formulated were: (i) There would be no significant difference among the four sub-cultural groups, namely, the high SES brahmin, the low SES brahmin, the high SES Harijan and the low SES Harijan in their performance on Level I tests. (ii) The socially disadvantaged children will perform significantly better than the socially advantaged children in regard to Level II tests. (iii) The magnitude of correlation coefficient between the tasks corresponding to Level I and Level II abilities will be greater for the high SES brahmins than the corresponding correlations for the low SES Harijans. (iv) The difference between socially disadvantaged and advantaged children in regard to Level II ability will be greater in the higher age group than in the lower age group. Data were collected from a sample of 500 subjects consisting of brahmin and Harijan children (of low and high SES) of two age levels, six to seven years (Class II) and eight to nine years (Class IV). A battery of tests measuring Level I (Digit Span Forward, Free Recall, and Serial Recall) and Level II (Coloured Progressive Matrices, Figure Copying, Digit Span Backward and Clustering) was administered to all the children. Data were analysed by analysis of variance.

Simple effects and specific interactions were tested by the Scheffe method of multiple comparison and t-tests.

The study revealed: (i) Differences favouring socially disadvantaged groups were apparent on the tasks measuring Level II abilities, namely, matrices, figure copying, clustering, and digit span (backward). (ii) As predicted by Jensen for most of the Level I tasks, except serial recall, the socio-economic status and the caste effects were not significant. (iii) The results showed a cumulative deficit of the socially disadvantaged children in all the tests of Level II abilities. These results were interpreted as evidence for the hypothesized differential growth curves for the Level I and the Level II abilities. (iv) Jensen's predicted relationships between the Level I and the Level II tests for advantaged and disadvantaged groups were not found.

**474. JAIN, N.K.,** *The Effect of Meditation on Personality Change*, Ph.D. Psy., Jab. U., 1971

The objective of the study was to assess the effect of meditation on personality. A pretest-posttest multiple group experimental design was adopted. The criterion variables in the study were self-assessment, adjustment, security-insecurity and anxiety. Data on these variables were collected with the help of a self-assessment adjustment inventory developed by the author, Maslow's Security-Insecurity Inventory, and Sinha's Anxiety Scale. Data on the education, age, income, profession were collected on an Index Blank Form. The experiments were conducted on thirty-six persons who attended Acharya Rajneesh's Meditation Camp and twenty-five students of Class IX with the age ranging from 13 to 15 years. Data were collected before meditation and again after a period of one month during which meditation sessions were conducted by the investigator in the same manner as conducted by Acharya Rajneesh. Further, a group of forty-five males and females in the age group 25 to 50 years and the twenty-five students were interviewed. The three major principles of the treatment variable followed in the experiment were living in the present, living naturally and living alone. The data were analysed by using mean, SD, critical ratio, chi-square tests and percentages.

The findings of the study were: (i) There were significant gains in the self-assessment adjustment dimension after meditation, in both the students' group and the camp group. (ii) There was a significant decline in insecurity in both the groups after meditation. The difference between pre- and post-experiment results was sig-

nificant at 0.01 level for the camp group and at 0.05 level for the student group. (iii) For the students, anxiety scores after meditation were significantly low. (iv) Seventy-six per cent students reported that they felt a welcome change in their study interest, concentration, etc. (v) Sixty per cent students felt more interested in creative work; 96 per cent reported that they enjoyed sound sleep; 80 per cent students reported to have developed more friends and better relations, and 20 per cent students reported a change in their feeling of meaninglessness in life. (vi) Significant improvement was reported by the camp group also with respect to sleep and dream, life aim, health reading habits, recreational habits, food habits, work efficiency, interpersonal relationships, meaninglessness in life, adjustability, etc.

**475. JAIN, S.,** *An Experimental Study of Drive, Work-Rest Ratio and Initial Performance of Perceptual Motor Reminiscence*, Ph.D. Edu., Punjabi U., 1976

The objective of the study was to find out the effect of drive, work-rest ratio and initial performance on perceptual motor reminiscence on tapping and inverted alphabet writing tasks.

A factorial design of  $4 \times 3 \times 2$ , having work-rest ratios (1 : 1, 1 : 2, 1 : 4 and 1 : 8), three initial performance levels (high, middle, and low), two drive levels (high and low), was used. A sample of 240 students (120 boys and 120 girls) in the age group of 18 to 25 years was selected from various teaching departments of Punjabi University. Subjects were selected according to the stratified random sampling. In the beginning of the experiment each subject was given a two-minute initial performance on tapping and inverted alphabet writing, then the subjects worked for one minute and rested for 1, 2, 4 and 8 minutes according to the condition and again worked for one minute. The apparatus for inverted alphabet writing and the tapping-board were used to measure the perceptual motor reminiscence.

The findings of the study were: (i) Drive was found to be an effective determiner of perceptual motor reminiscence on tapping. High reminiscence scores were obtained under high drive rather than low drive condition. (ii) Though F-ratio was not found significant in the case of boys, it was found to be significant in the case of girls. (iii) On inverted alphabet writing, drive proved an effective determiner. (iv) Work-rest ratio also proved to be important determiner of reminiscence on tapping and inverted alphabet writing. For tapping, 1:8 work-rest



ratio yielded the highest reminiscence scores. For boys, on tapping F-ratio was not significant but for girls F-ratio was found to be significant. The 1:4 work-rest ratio group of boys and girls had the highest reminiscence on inverted alphabet writing. (v) Reminiscence was found to depend on initial performance level in both the tasks, higher reminiscence scores having been obtained by the high initial performance level group than by the middle and the low initial performance level groups.

476. JAISWAL, A.N., *Personality Patterns of Educable Mentally Retarded Children*, Ph.D. Psy., Kashi Vidyapith, Varanasi, 1978

The objectives of the investigation were: (i) to determine the developmental personality pattern of educable mentally retarded (EMR) children on six age levels of middle childhood, (ii) to determine the extent of significance of difference between the EMR and normal age-matched children on each developmental age level of middle childhood, (iii) to determine the personality patterns of the two extreme groups of EMRs, (iv) to observe the differences in the developmental trends on each personality factor, separately between the EMR and the normal group of children, (v) to develop the Early School Personality Questionnaire's profiles for EMR and normal children on each age level, and (vi) to determine a comparative estimation of personality problems of EMR children.

The Intelligence Scale for Indian Children (Malin), the Early School Personality Questionnaire and the Early School Personality Rating Scale were employed for data collection. The study was conducted on samples of 300 EMRs and 100 normally intelligent children of 6–9 years of age. The subjects in both the samples were grouped in six age groups starting from six to nine years with an interval of six months. The ratio of 3:1 for each developmental age was maintained between the EMR and the normal children. The I.Q. of the EMRs ranged from 50 to 70. The EMR group was further divided into two groups, brights (I.Q. range 70–65) and backwards (I.Q. range 55–50), for finding out the differences and similarities in their personality pattern. The data were analysed by using the t-test of significance of differences between means and profile matching.

The main findings of the study were: (i) Socio-economic deprivation, cultural impoverishment and familial problems had equal impact on the EMR and the normal children with respect to age. (ii) Personality trait

position in the third age group (7 years 6 months — 8 years) suggested personality changes likely to take place in the age group for both the EMR and the normal sample. (iii) In respect of developmental trends on the personality Factor A (reserved vs outgoing), the EMR children in their initial stages of scoring appeared to be less responsive than the normals. Due to the process of socialization and schooling they tended to attune themselves to other normal children. (iv) on Factor B (less intelligent vs more intelligent), the EMR group regressed in the intellectual functions but the normal children progressed in the early part of the middle childhood schooling. In the later stages of development (8–9 years) both the groups of children reverted to their former intellectual levels. (v) Developmental trend on Factor C (emotional instability vs stability) suggested that socialization through schools apparently did not add emotional stability among the EMRs. (vi) The EMRs were significantly more inactive and stodgy than the normals. (vii) Developmental trends on Factor E (submissive vs dominant) showed similarity in initial stages, regression in EMRs in middle stages and reversion to their original scores on this factor in the later stages of development. (viii) The nature of profiles on Factors O (placid vs apprehensive) and Q4 (relaxed vs tense), which reflected the state of mental health suggested that the EMR children got relaxation by schooling in their initial stages, but as the process of socialization progressed they increasingly suffered stress. The EMRs leaned towards frustration and tension but the normal ones remained unfrustrated. (ix) On the whole, on the basis of their personality profiles the EMR children were a little detached (A-) and emotionally less stable (C-) and they exhibited tendencies of self-depreciation (F-), possessed weaker super-ego strength (G-), were sensitive and withdrawn (H-) and also appeared to be reflective, sentimental, depressive (O+) and frustrated (Q<sub>4</sub>+). (x) Comparative profiles of all the six age levels proved that, developmentally the EMRs presented a picture of a heterogeneous mass of children who did not seem to be consistent in matters of their socialization, education, growth and development.

477. JAYASWAL, V.K., *A Study of Creativity in relation to Anxiety in Male and Female Teacher Trainees*, Ph.D. Edu., Gor. U., 1977

The main aims of study were: (i) to explore the pattern of relationships between creativity and anxiety among teacher trainees, and (ii) to find out the impact of sex,

academic background, rural/urban settings and family income on creativity scores among the teacher trainees.

Six hypotheses were framed to achieve the objectives. The study was conducted on a sample of 234 male and 270 female teacher trainees drawn from all the five teacher training institutions of Varanasi by using the incidental purposive sampling technique. The Hindi adaptation of the Torrance Tests of Creative Thinking (Verbal Form) and Dutt's Personality Inventory for measuring anxiety were used. Statistical techniques like analysis of variance, t-test, product moment coefficient of correlation, eta coefficients and partial correlation coefficients were used for analysing the data.

The main findings of the study were: (i) Anxiety on the whole was negatively correlated with creativity and its factors such as fluency, flexibility and originality. (ii) There was no significant relationship between anxiety and creativity in the female sample. (iii) Anxiety had negative and significant correlation with creativity in the male sample. (iv) The relationship between anxiety and creativity was not curvilinear. (v) The high and the low creative groups did not differ significantly on their anxiety score. (vi) The high and the low anxiety groups did not differ significantly on creativity scores. (vii) The female teacher trainees were significantly superior to the male trainees on fluency and flexibility. (viii) The male teacher trainees were significantly higher than the female trainees on the originality factor. (ix) There was no significant sex difference on composite creativity scores. (x) The male science group teacher trainees were significantly higher than the arts group trainees on creativity scores. (xi) There was no significant academic group differences in the female sample on creativity scores. (xii) The female arts group teacher trainees were significantly higher than the male arts group trainees on creativity scores. (xiii) There were no sex differences in creativity scores among the male and the female science group trainees. (xiv) There was no difference in the creativity scores of the teacher trainees belonging to the urban and the rural areas. (xv) The family income was positively related to creativity. (xvi) The high income group male and female student trainees scored significantly higher on creativity than their counterparts in the lower income group.

**478. JHAG, D.S.,** *A Study of Personality Correlates of Creative Children 15 plus Studying Science Subjects*, Ph.D. Edu., Bhopal U., 1979

The objectives of the study were: (i) to develop tests of

scientific creativity at the higher secondary level, (ii) to explain scientific creative behaviour in terms of specific constellation of certain personality correlates, (iii) to see whether creativity could be better understood within the cognito-personalological context, (iv) to compare the personality traits of creative science pupils with non-creative science students, and (v) to compare and contrast personality correlates of highly creative and highly intelligent science pupils.

The study was conducted on a sample of 700 higher secondary school students of fifteen plus, drawn from the Bhopal division of Madhya Pradesh. The sample was a multi-staged one to enable the development of the scientific creativity test and the investigation of personality correlates. Data were collected by the High School Personality Questionnaire (HSPQ) of Cattell, measuring fourteen distinct personality traits or dimensions, Mehdi's Verbal Test of Creative Thinking and Jalota's Intelligence Test comprising 100 items on vocabulary, number series, classification, best answers, inferences and analogies. The achievement indices of the subjects were represented by the average of marks in physics, chemistry, mathematics and biology. The Tests of Scientific Creativity were developed and standardized by the investigator based on the content of science subjects up to the high school level. The test comprised two parts, the first part pertained to the factors of divergent thinking and the second part pertained to the factors of convergent thinking, cognition and evaluation categories. The study was limited to the investigation of personality correlates of the creative and the non-creative and the highly intelligent and highly creative pupils.

The findings of the study were: (i) Scientific creativity was normally distributed. (ii) The urban students were superior to the semi-urban, in scientific creativity. (iii) The creatives and non-creatives did not differ significantly on Personality Factor A (reserved vs outgoing). (iv) The male and the female subjects had more or less similar personality styles in respect of the reserved versus outgoing trait. (v) Students belonging to the urban and semi-urban background did not differ significantly in personality styles, particularly on the reserved versus outgoing trait. (vi) There was significant contribution of scientific creativity to the variance in Factor B (concrete thinking versus abstract thinking). (vii) Creative students were significantly better in abstract thinking, emotional stability, independence, self-sufficiency, self-concept and intelligence and were more venturesome, relaxed, controlled and doubting. (viii) The creative boys were adventurous while the creative girls were shy, timid, restrained and sensitive to threat. (ix) The crea-

tive boys were more self-assured, placid, secure, complacent and serene while the creative girls were more guilt-prone, apprehensive, self-reproaching, insecure and worrying. (x) There was no difference in the pattern of personality correlates of creative children from the urban and semi-urban areas. (xi) The semi-urban students were more shy, restrained, different and timid than their urban counterparts. (xii) The semi-urban boys were more rule-bound, persevering, venturesome, socially bold, precise and self-disciplined than the urban boys. (xiii) The urban girls were more rule-bound, persevering, assertive and socially precise than the semi-urban girls. (xiv) There was no significant difference in the achievement of the high creative and the high intelligent groups.

**479. KABU, C.L.,** *A Psychological Analysis of the Mathematically Gifted at the Secondary and Higher Levels of Education*, Ph.D. Edu., Jammu U., 1980

The specific aims of the study were: (i) to find out whether the mathematically gifted were superior in numerical ability, abstract reasoning, intelligence and creativity to the average or non-gifted group, (ii) to determine the influence of rote memory on mathematical talent, (iii) to find out whether the mathematically gifted exhibited better adjustment than the non-gifted, and (iv) to compare the mathematically gifted with the non-gifted on various personality factors.

A sample of 550 students consisting of mathematically gifted and non-gifted was selected. The tools used were Cattell's Culture Free Test of Intelligence, Numerical Ability Test, Abstract Reasoning Test, Baqer Mehdi's Test of Creative Thinking, Cattell's 16 PF, Asthanas' Adjustment Inventory and Rote Memory Test.

The major findings were: (i) The factor of intelligence was found to have significant influence on mathematical talent at the undergraduate level. (ii) The numerical ability and abstract reasoning were found significantly more in the mathematically gifted than in the non-gifted, both at the undergraduate and the postgraduate levels. (iii) Personality factors were not found to have any consistent pattern in the mathematically gifted of different classes. (iv) The mathematically gifted of different classes were found to be well adjusted as compared to their counterparts. (v) The mathematically gifted in B.A. Part I were found to be significantly higher on all the six factors of creativity.

**480. KALRA, N.,** *Patterns of Psychological Problems*

*of Children of 5-13 Years — Their Etiology and Symptomology*, Ph.D. Psy., Agra U., 1979

The research was undertaken to study the behaviour problems of children with a view to understand behaviour disorders and their social background. The following hypotheses were formulated: (i) Faulty rearing practices were likely to cause deviation in the behavioural pattern of the child. (ii) An emotionally deprived child was prone to behavioural problems. (iii) Social and economic impoverishment may result in deviant behaviour. (iv) Organic deficiencies may lead to abnormal behaviour. (v) Age, sex and birth order as well as the family size and structure may influence behavioural problems.

The study was confined to only those children who attended the child guidance clinic at the S.N. Medical College, Agra. As many as 250 children from among the 512 cases who appeared in the clinic were studied; the age range was 5 to 13 years. Those who had behavioural problems due to physical deficiencies were excluded. The period of the study was two and a half years (July 1974 to December 1976). The study was conducted in two phases—the pilot study and the final study after consulting the clinical psychologists at the centre. The tools used in the study to measure behavioural problems were open-ended interview schedule and intelligence tests. Seguin Form Board, Bhatia's Battery of Performance Test and Vineland Social Maturity Scale were used for measuring intelligence.

The findings of the study were: (i) There were 176 boys and 74 girls among whom 56.8 per cent were mentally retarded. (ii) The maximum number of children came from the families of businessmen followed by the children of Grade III employees. (iii) Faulty rearing practices resulted in habit disorders, speech defects, personality problems, sleep defects and psychosomatic problems. (iv) Emotional deprivation on the part of the parents led to the problems of personality, habit and anxiety state and, to a lesser extent, scholastic backwardness, psychosomatic problems and speech defects. (v) Socio-economic deficiencies of the parents mainly resulted in the problems of habit and sleep rather than other behavioural problems. (vi) Organic deficiencies led to various behavioural problems like scholastic backwardness, habit disorders, speech defects, feeding problems, antisocial activities more than other problems. (vii) Age showed significant difference but other factors like sex, birth order, family size and structure did not reveal significant relationship with children's behavioural disorders. (viii) Scholastic backwardness, habit disorder

ders, speech defects, personality problems and feeding problems were more prominent than the problems of sleep, psychosomatic problems, anti-social activities, anxiety, schizophrenia and functional fits. (ix) Organic deficiencies of children were the etiological factors of behavioural problems, next were faulty rearing practices, emotional depression, SES deficiencies of the parents (in order). As a result of the scrutiny of etiological factors it was found that over-protection, rejection, strict discipline and the lack of training led to faulty rearing practices; emotional deprivation was due to separation from the parents, lack of affection and sibling partiality; socio-economic deficiencies were due to maladjusted family, low economic condition and absence of recreational facilities; and organic deficiencies were due to mental retardation and reaction to physical injury and ailments. Intelligence played an important part in determining different types of behavioural problems. (x) Antisocial behaviour and functional fits were observed in the males only. (xi) Children's behavioural problems never appeared alone but in clusters. Aggressiveness, rigidity, timidity and sensitiveness were common associated problems; fear of darkness, animal sounds and persons were common with children. (xii) Birth order (first-born), family size and structure, SES and parent's education did not play a significant role in causing behavioural problems. (xiii) One cause could lead to various behavioural problems, viz., over-protection could lead to enuresis and delayed speech development.

481. KAMAT, V., *A Comparative Study of the Self-Perception of Backward Class and Non-backward Class Students and Their Socio-economic Status, Vocational and Educational Aspirations, Educational Achievement and School Environment*, Ph.D. Edu., Bom. U., 1981

The main purpose of the investigation was to compare the backward class students with the non-backward class students with respect to the variables of self-perception, education and environment.

Accordingly, the main objectives of the study were: (i) to measure the self-perception, i.e., the perceived self, the ideal self, the social self, and to find out discrepancy in the ideal self and the perceived self, discrepancy in the ideal self and the social self, and the perceived self and the social self of the backward class boys and girls and the non-backward class boys and girls, (ii) to find out the difference, if any, in the factors of self-percep-

tion of the non-backward class and the backward class students, (iii) to find out the socio-economic status of the non-backward class students, (iv) to investigate the backward class and non-backward class students' leisure-time activities (LTA), scholastic achievement (SA), educational aspirations (EA), vocational choice (VC) and school environment (SE), and to find out if there were differences among the backward class and the non-backward class students with reference to the above-mentioned variables, and (v) to find out the extent to which the self-concept of the backward class and the non-backward class students was influenced by such factors as socio-economic status, leisure-time activities, scholastic achievement, educational aspirations, vocational choice and school environment.

The descriptive-statistical method was used and the multivariate statistical analysis employed for processing the data. Different sets of sample were required for the study. For determining the social prestige values of the vocations a multistage sample of 100 adults from different strata of the society and from different occupations and professions like medicine, engineering, teaching, clerical, tailoring, etc., from different parts of the State was selected; the method of selecting the sample was incidental. For determining the leisure-time activities, a sample of thirty students from Standards X and XII was selected randomly from one school and one junior college in order to prepare the LTA test.

For testing the hypotheses an incidental sample of 900 students (450 BC and 450 non-BC) from Standards X and XII from higher secondary schools and junior colleges from all over Maharashtra was selected. For determining the social prestige values of the vocations a list of 147 vocations was prepared after a number of try-outs. In order to rate the vocations according to the social prestige values a nine-point rating scale was prepared. For measuring self-perception, the Deo-Jagawar Self-Concept Inventory using a four-point rating scale was administered. The Deo-Jagawar (SES) scale was used for obtaining data on the socio-economic variables. Scales for schools environment and educational aspirations were also prepared. The average of marks obtained by students in three consecutive annual examinations was taken as academic achievement.

Data were collected in two stages. The rating scale and the list of vocations were given to 100 adults for rating the vocations. Data were obtained from the students by giving them the scales listed, the personal information sheet and the SES and self-perception inventories. The scores on all the variables were organized into four groups, namely backward class girls, backward class

boys, non-backward class girls and non-backward class boys. Analysis of data were done by computing the critical ratios for the backward class and the non-backward class students on the distribution of all the twelve variables as well as by employing the two-way analysis of variance with (2×2) factorial design to test the global effect of backwardness or non-backwardness and SES, LTA, SA, EA, VC and SE on self-perception of the students. Correlation matrices for the twelve variables of non-BC and BC students were developed and factor analysis was done to see which factors or variables were related to the backwardness of the students and to study their inter-relationship. Qualitative analysis of the differences was also done specially for vocational choices.

The major findings were: (i) Higher social prestige was enjoyed by those occupations that required greater amount of training, skill and talent; vocations involving manual work got low social prestige values. (ii) The backward class and the non-backward class students differed significantly in their self-concept. (iii) The perceived self, the ideal self and the social self of the non-backward class students were respectively higher than those of the backward class students. (iv) The discrepancy in the ideal self and the perceived self was more in the case of the backward class students, indicating higher ideal self resulting in adjustment problems. (v) The discrepancy between the ideal self and the social self did not show a significant difference in the BC and the non-BC students. (vi) The discrepancy in the perceived self and the social self was higher in the case of the backward class students due to their low social self. (vii) The backward class and the non-backward class students differed significantly in their socio-economic status, the former living in poor condition. (viii) The non-backward class students had a higher mean score on LTA, i.e., they used their leisure-time in various useful activities. (ix) The non-backward class students' average scholastic achievement was significantly better than that of the backward class students. (x) The backward class and the non-backward class students also differed in their educational aspirations, that of the former being below the graduate level and of the latter above the graduate level. (xi) The backward class and the non-backward class students differed in their perception of the school environment; non-backward class students had a better perception of environment than the backward class students. (xii) The non-backward class students aspired for vocations which had higher social prestige values, whereas backward class students aspired for vocations which had comparatively low social prestige values. (xiii) About 100 vty vocations were not chosen by any student. (xiv)

Generally, white-collar jobs were chosen more than manual jobs. (xv) The five reasons which played a major role in determining the vocational choices of the students were: liking for the work involved, possession of ability for the work, father's advice, mother's advice and ample earnings from the vocation. (xvi) Four factors influenced in the case of non-backward class students, namely, educational ability, self-perception, ideal self with discrepancy in the perceived self and the social self, and social self with discrepancy in the ideal self and the perceived self. (xvii) In the case of the backward class students five factors were found significant, namely, self-perception, educational ability, ideal self with discrepancy in the perceived self and the social self, social self with discrepancy in the ideal self and the perceived self and socio-economic background. It was concluded on the basis of the results that, generally, the backward class students were deprived of proper social, cultural and educational facilities and that they also had a lower self-concept.

482. KAUSER, F., *Children's Curiosity and Its Relationship to Intelligence, Creativity and Personality*, Ph.D. Psy., Madras, 1982

The study was an exploratory attempt to investigate the relationship of curiosity to intelligence, creativity, extraversion and neuroticism in elementary school children of 7 to 10 years of age. It also aimed at finding out the sex difference in curiosity in children of the same age group as well as differences in curiosity between the high and the low socio-economic status groups of 10-year old boys and girls.

For assessing curiosity, an adaptation of Maw and Maw's The-You-Test of curiosity was used. Goodenough's Draw-a-Man test adapted by Phatak was used to measure intelligence. Creativity was assessed by the short scale of the Wallach and Kogan battery of creativity instruments as adapted by Paramesh. Extraversion and neuroticism were found out by means of the Junior Eyesenck Personality Inventory as adapted by Sarojini. The sample for the main study consisted of 500 boys and girls of age 7 to 10 studying in Standards III, IV and V drawn at random from four schools in the city of Madras.

The major findings of the study were: (i) There was no significant relationship between curiosity and intelligence on an overall basis except for girls of 10 year of age. (ii) The relationship between curiosity and creativity was significant only for certain age groups; however,

no developmental trend was observed. (iii) The relationship between curiosity and extraversion was significant for certain age groups and for certain subtests of curiosity. There was no overall significant relationship between curiosity and extraversion. (iv) The relationship between curiosity and neuroticism was not significant. (v) The multiple correlation between curiosity and intelligence, creativity, extraversion and neuroticism for different age groups indicated overall significant relationship. It was therefore inferred that curiosity was a combined effect of the variables — intelligence, creativity, extraversion and neuroticism. (vi) Boys generally scored higher in curiosity than girls. The younger age groups showed a higher level of curiosity than the older groups. (vii) There were significant differences in curiosity between the high and the low socio-economic boys and girls of the 10-year age group. The difference in curiosity between the high and the low socio-economic status groups of girls was more pronounced than that of the boys. (viii) Curiosity is a multifactor phenomenon and a complex construct involving cognitive and personality factors.

**483. KHAN, S.R.,** *A Psycho-Social Study of Tension in the College-going Youth*, Ph.D. Psy., AMU, 1980

The study was undertaken to investigate the psychosocial causes of tension in the college-going youth. The hypotheses stated were: (i) Uncertainty concerning employment opportunities was likely to be more among the high tension group of youth than among the low tension group. (ii) The high tension group was likely to be more vacillating in regard to the choice of traditional versus modern values. (iii) Tension in the young student community is associated with unfavourable attitude towards government, university authority, student leaders, political parties, police and parents and guardians. (iv) Tension among the young students was likely to be associated with inadequate communication between teachers and students. (v) Tension was likely to be greater among young students who hailed from urban areas than among those who resided in rural areas. (vi) Economic conditions could be a relevant variable as far as tension among the youth (students) was concerned. (vii) The patterns of responses on Cantril's Self-anchoring Questionnaire may reflect passivism or unrealistic level of aspiration on the part of the tense youth.

The sample of 704 students falling in the age group 18 to 22 years was selected from intermediate and B.A. first year classes of the colleges situated in Aligarh and Bulandshahar. The Sinha Anxiety Scale, Security-Insec-

urity Inventory and Cattell's Q4 dimension of ergic tension were taken as the measures of different components of tension. In order to identify the two required groups, namely, the high tension and the low tension of relaxed, the composite of scores on these three scales was used as the measure of tension. The modified version of the questionnaire developed by Chandra was used to collect data related to motivational aspect, aims and goals, values regarding family traditions and customs, intercaste and inter-communal marriages, attitudes and communication with the teacher. The level of the aspiration was measured by administering Cantril's Self-anchoring Questionnaire (Ladder Scale). The data were analysed by computing chi-square and critical ratios.

The findings were: (i) Uncertainty concerning the possibility of employment was significantly more among the youth having high tension than among the low tension youth. (ii) The high tension group was significantly more vacillating in regard to the choice of traditional versus modern values. (iii) Tension in the student community was associated with unfavourable attitude towards government, university authorities, student leaders, political parties, police and parents and guardians. (iv) Tension among the young student was associated with inadequate communication between teachers and students. (v) Tension was more among young students who hailed from urban areas than among those who resided in rural areas. (vi) There was no difference in tension between the high income group and the middle income group, and the high income group with the low income group but there was significant difference between the middle and the low income groups. (vii) There was more discrepancy, both positive and negative, in the aspiration and previous level of attainment in the case of the high tension group. The high tension group also showed the patterns of ratings which indicated sense of despair and fear of failure. In contrast, the low tension group seemed to be hopeful about a brighter future.

**484. KISHORE, G.,** *A Developmental Study of Creativity in relation to Certain Personality Correlates*, Ph.D. Psy., AMU, 1981

The main purpose of the investigation was to explore and identify creativity in pre-adolescent children at the secondary school stage. Three broad objectives were: (i) to construct and standardize a battery of tests capable of measuring creativity at both the verbal and the non-verbal levels of behaviour in children in the Hindi-speaking belt, (ii) to study creativity development along the age

continuum (and also education), and (iii) to explore the relationship between creativity and personality structure.

The study was completed in two stages. The first was the preparation of the creative thinking tests. The second stage comprised a probe into the course of creative development and identification of personality correlates of creativity. Essentially based on Torrance's concept of creative thinking, the battery consisted of both verbal and non-verbal items. It was divided into two separate parts, viz., verbal and non-verbal. In choosing relevant materials for the tests, task revealing traits of fluency, flexibility, originality and elaboration were specified. The verbal test sampled linguistic behaviour as against figural behaviour in the case of the non-verbal one. The sample consisted of 965 students of Classes VI to X of a single school. The tools used were the creativity tests developed by the investigator, General Intelligence Test (Junior and Senior, Mohsin) and High School Personality Questionnaire (HSPQ).

The major findings were: (i) The high interfactor and factor-test correlations indicated that all the factors by both the tests possessed satisfactory factor (construct) validity. (ii) Significant but considerably low correlations of both the tests with intelligence reinforced confidence in the discriminant validity of the tests. (iii) Concurrent validities with teacher ratings and scholastic achievement showed low but significant relationships. (iv) Test-retest reliabilities of both the tests were found to be quite high; evidences of inter-scorer reliability were also very encouraging implying that the two test batteries constituted a reliable and valid tool for identification of creative talent at the secondary stage. (v) The developmental curves for different creativity measures revealed a consistent increase from Grades VI to VIII (i.e., from age 11 to 13). After this period there appeared a general decline, except for non-verbal elaboration, up to the age of fifteen, i.e., Grade X. Elaboration showed a tendency to develop with maturity and experience. The graphical displays revealed an important fact that the period of greatest potential productivity was found to lie between the age 13 and 14. (vi) Scores for creativity and personality characteristics of various grades indicated that during Classes VI to VIII divergent traits of personality, viz., out-going, more intelligent, emotionally stable, excitable, assertive, happy-go-lucky, venturesome, doubting, self-sufficient, expedient, tough-minded, placid, indisciplined and relaxed, were found consistently associated with all the creativity measures. In the later classes IX-X, convergent personality traits different from those listed above (except intelli-

gence) were found highly correlated with all the creativity measures.

- 485.** KOUL, L., *Differences in Need Affiliation and Need Abasement among Adolescents at High and Low Levels of Intelligence and Socio-economic Status*, Kur. U., 1974

The main aim of the enquiry was to study the differences in need affiliation and need abasement among adolescents at higher and lower levels of intelligence and socio-economic status.

The sample comprised 300 boys and 300 girls selected from five boys' and five girls' schools of Punjab and Haryana. The tools used were Jalota's Group Intelligence Test in Hindi, Socio-Economic Status Scale of Kuppuswamy, and the Hindi version of EPPS by Bhatnagar. A  $2 \times 2 \times 2$  factorial design using analysis of variance was planned for data analysis.

The major findings were: (i) The students belonging to higher socio-economic status families were more affiliation-oriented than the students from lower socio-economic status families. (ii) The students belonging to low socio-economic status families had higher degree of need abasement than the students from higher socio-economic status families. (iii) Sex and intelligence were not found to influence need affiliation and need abasement. (iv) Differences between boys and girls on need affiliation were not the same at the two levels of socio-economic status. The effect of sex on need affiliation was influenced by the socio-economic status variable. (v) Differences in means of need affiliation and need abasement averaged over high and low levels of intelligence were of the same nature in boys and girls and in students from high and low socio-economic status families. (vi) The interaction effect of sex, intelligence and socio-economic status was not found to influence need affiliation and need abasement to any significant extent.

- 486.** KRISHNA, K.P., *A Study of Some Antecedents and Personality Correlates of Risk-taking Behaviour*, Ph.D. Psy., Mag. U., 1973

The study was undertaken with a view to examining the role of a number of personal variables like age, sex, etc., antecedents like dominance, possessiveness, etc., and personality factors on risk-taking behaviour of students of Grade XI.

The sample comprised 200 students of Grade XI, of

whom 100 were males and 100 were females. Both the groups of subjects were matched in terms of their mean age. The tools used were: Kogan and Wallach Choice Dilemmas Questionnaire (CDQ), Eysenck's Personality Inventory, Maslow's S-I Inventory to measure security-insecurity, Sinha and Krishna's Revised Comprehensive Test of Anxiety, Bell Adjustment Inventory, Gordon's Personal Profile, Mukherjee's Sentence Completion Test to measure need achievement, Kogan and Wallach Certainty of Judgement and Shoben's Parent Attitude Survey.

The major findings were: (i) The male and the female students differed significantly in risk-taking, neuroticism, extraversion, security-insecurity, home adjustment and responsibility dimensions of personality. The males showed greater predisposition to conservatism, neuroticism, introversion, insecurity, poor adjustment at home and less sense of responsibility than their female counterparts. (ii) The two sexes did not differ significantly in terms of anxiety, health, social and emotional adjustment, sociability, ascendancy, emotional stability, need achievement and certainty of judgement. (iii) The main effect of sex was significant only in the case of risk-taking, neuroticism, extroversion, security-insecurity, home adjustment, sociability and responsibility dimensions. The main effect of personality was significant only in the case of risk-taking. The interaction effect was, however, significant only in the case of sociability. (iv) Risk-taking and age were found to be independent. (v) The high risk-takers did not differ significantly from the low risk-takers in terms of socio-economic status, ordinal position, inhabitation and caste. (vi) Wards of parents with high and low possessiveness, high and low dominance, high and low ignoring traits did not differ in terms of their risk-taking behaviour. (vii) The correlation was high between risk-taking and adjustment ( $r = -0.384$ ), risk-taking and sociability ( $r = 0.751$ ), risk-taking and ascendancy ( $r = -0.560$ ), responsibility ( $r = -0.339$ ), emotional stability ( $r = -0.820$ ), certainty of judgement ( $r = -0.378$ ) for males and in the case of emotional adjustment ( $r = -0.233$ ) for females.

487. KRISHNAN, S., *A Study of Adolescent Problems through Fantasies*, SIET College for Women, Madras, 1976

The investigation was undertaken to study the problems of adolescent boys and girls of high and low socio-economic status using fantasy as a tool.

The sample comprised 800 adolescents selected from

the schools and colleges of Madras — 400 boys and 400 girls belonging to high and low socio-economic status equally. The material used for the study of fantasy consisted of a Picture Story Test and Verbal Projection Test. Data analysis was done using analysis of variance.

The salient findings were: (i) There was significant difference in the mean problem scores pertaining to the area of family relationship among different age and sex groups. The adolescents belonging to families of low socio-economic status expressed more significant non-adjustive responses indicating greater degree of problems in adjustment with family members than those coming from families of high socio-economic status. (ii) In the area of problems of adjustment to school environment and fear of failure in examinations, the adolescents coming from families of low socio-economic status expressed more problems than those from families of upper socio-economic status. However, age and sex had no relationship with problems in this area. (iii) Problems of adjustment to the members of the opposite sex differed with age and socio-economic status. Continuous evaluation compensated for some of the socio-economic environmental handicaps faced by students coming from unfavourable socio-economic status groups.

488. KUMAR, D., *A Psychological Study of Intelligence and Intellectual Stimulation Received by the Students Studying in Different Types of Junior High Schools of Tarai Area (Nainital) of Uttar Pradesh*, Ph.D. Psy., Kum. U., 1981

The main hypothesis of the study was that the difference in intellectual or mental factors with reference to cognitive aspects among students of different educational systems may be accounted for by the difference in quality of schooling (other conditions being controlled). The sub-hypotheses contained in it were: (i) The intellectual abilities of convent students (CS) are more developed than those of higher secondary school (HSS) students and municipal school (MS) students. (ii) The intellectual abilities of the HSS students are more developed than those of the MS students. (iii) If the uniformity of schooling is maintained, the educational system would, within the respective system, suggest null effect of parental SES on children's performances on the test of intelligence. (iv) The same parental SES when tempered by heterogeneous schooling imparted by different educational systems, would be expected to differentiate between children of different school systems with regard to their performance on intelligence tests, though in les-



ser degree at those of k saturation and in greater degree at g saturation. (v) Spatial ability is better developed in boys than in girls. (vi) Verbal ability is more developed in girls than in boys.

A sample of 387 Class X students, equally chosen from both the sexes, was pooled from the six schools of Nainital under three different junior secondary systems of education, viz., CS, HSS and MS. Initially the tests (verbal and non-verbal ability tests) were administered to the selected 387 students; however, for further requirements of matching for sex, age and socio-economic status a further selection was made and finally 252 cases of Class VIII students were selected. To analyse the data the t-test (for high and low groups) and two tailed t-test formula modified by Vernon (for uncorrelated groups) were used.

The investigation revealed: (i) The overall results confirmed the main hypothesis. (ii) The intellectual abilities of convent students (CS) were more developed than those of higher secondary school (HSS) students and municipal school (MS) students. (iii) The sub-hypotheses (iii) and (iv) were also confirmed. (iv) The students belonging to different SES but studying in similar schools did not differ significantly from each other. (v) The students belonging to the same SES group but studying in different types of schools differed in their abilities. The difference was more marked between the convent schools and the other two systems, namely, higher secondary schools and municipal schools than between these two systems. (vi) No difference was observed in verbal and spatial abilities of students of the two sexes.

**489. KUMAR, P.C., *Leadership Traits as Perceived by Peers*, Ph.D. Psy., BHU, 1980**

The main objectives of the study were: (i) to find out whether peers were capable of perceiving and assessing, with some measure of objectivity, the differential leadership attributes in a given group situation or situations, (ii) to investigate if these perceptual estimates or judgements in the form of peers' ratings could be validated against some objective criterion measures such as scores on personality scales measuring the same personality attributes, and (iii) to find out differential pictures of personal characteristics that might emerge out of comparison between the personality scores of high scoring and low scoring leaders and also between leaders and non-leaders.

The study was conducted in three phases. The first

phase was eliciting opinion for identification of specific group situations as perceived by peers and ascertaining their felt need for leaders and also obtaining detailed descriptions of actual leadership behaviour. The second phase was quantitative assessment for obtaining quantitative indices in terms of peers' rating about leadership behaviour and the third phase was validation of peers' judgement against some objective criteria. Samples of 598, 1042 and 441 girl students were drawn from Classes VII, VIII and IX of the seven girls' schools of Varanasi and Allahabad for the first, second and third phases of the study, respectively. The techniques and tools used for the study were Group Interview, Leadership Characteristics Rating Scales developed by the investigator, Saxena's Adjustment Inventory, Hindi adaptation of the Neymann-Kohstedt Introversion-Extraversion Scale, and Tripathi's Personal Preference Schedule. Ranking, chi-square, t-tests and non-parametric median tests were used for analysing the data.

The major findings of the study were: (i) The subjects clearly identified five distinct group situations with their respective leadership role as the classroom or a prayer assembly — monitor; the team for a game — the captain; the N.C.C., P.T. or scouting company — the sergeant or company leader; debating society or literary society — secretary, and picnic groups or outings — picnic secretary. (ii) The peers distinctly identified five leadership roles in five sets of activities. (iii) There were as many as ten activities or attributes that were common to all or a minimum of three group situations. The remaining characteristics were related only to the respective leadership role. The common attributes pertaining to all leadership roles were: good nature, boldness and independence, alertness in supervision, impartiality, honesty, capability of meeting and talking with people without hesitation, capability of resolving and arbitrating peer's disputes, capability of exerting influence, capability of persuading the peers and bringing them round to one's views and having regard for others' views, feelings and sentiments. (iv) Honesty had the first rank in all the areas except captainship where it received the record rank. Similarly, good nature (adjustment) also emerged as highly valued general trait. Boldness and independence, alertness in supervision and impartiality were not so uniformly higher on the ordinal ladder. However, all the ten general traits were adjudged essential for successful leadership. (v) The successful leaders were consistently superior to non-leaders on five general traits, viz., extraversion autonomy, adjustment, intraception and dominance. (vi) The specific traits for different leadership roles were also found to be quite significantly

discriminative of leaders and non-leaders. (vii) The validation of the traits like honesty, impartiality, patriotism, smartness, liberalism and task competencies could not be done because objective criteria for these were not available. (viii) Peers as young as those included in the sample were quite capable of perceiving and judging personality attributes necessary for successful leadership with a satisfactory level of objectivity and validity.

**490.** KUMAR, R.B., *Personality Traits of Indian Adolescent Girls, a Psycho-analytic Study*, D. Phil. Psy., All. U., 1954

The objectives of the study were: (i) to find out the developmental process of the Indian girls' personality during the adolescent period, and (ii) to relate the particular traits with the earlier events as well as the present environmental conditions.

The study was confined to fifty adolescent girls. Tools used were TAT, Rorschach Ink Blot Test and Polack Picture Test.

The results of the study were: (i) No generalization could be made about the common personality traits shared by all the people of a particular nation. No similarity could be found in any two individuals. (ii) A common tendency in the psyche of the sample was peculiar confusion between the positive identification with the mother and the internalization of father's super-ego. (iii) The efforts to keep up the super-ego ideals was very strong. (iv) Super-ego was not so strong that it might crush the id impulses. (v) Such super-ego coupled with the Indian standard of modesty give rise to an increased feeling of anxiety and guilt. (vi) Parents had great responsibilities in developing a sane successful personality of their children.

**491.** KUMARI, P. *Personality Needs, Moral Judgement, and Value Patterns of Secondary School Teachers — a Critical Analysis*, Ph.D. Edu., Gor. U., 1981

The objectives of the investigation were: (i) to make a comparative study of the scores of male and female teachers in the inventory on values, personality needs and moral judgement, (ii) to make a comparative study of the scores of teachers belonging to different localities (rural and urban) in the inventories mentioned above, (iii) to make a comparative study of the scores of young (below 20 years), and old (45 years and above) teachers

in the inventories mentioned above, and (iv) to determine the degree of relationship between the scores of male and female secondary school teachers in personality needs, value and moral judgement inventories. The sample was selected through random sampling procedure.

The findings of the study were: (i) Male and female teachers expressed high preference for the theoretical value and affiliation need. The teachers of both the sexes expressed keen moral sense. (ii) Male teachers secured better points in the aesthetic, political and social values than female teachers. (iii) Urban male teachers were more moral than rural male teachers. (iv) Urban female teachers preferred economic and social values; rural female teachers were aesthetic, theoretical and religious. (v) Rural female teachers had higher sense of morality than urban female teachers. (vi) Teachers who were above 45 years preferred the needs of achievement, change and order. Teachers below 30 years had the need of affiliation. As far as moral judgement was concerned, male teachers below 30 years appeared to be more moral than those above 45 years. (vii) Female teachers above 45 years had the need of affiliation, and those below 30 years had the need of achievement, change and order. Female teachers below 30 years were more moral than those above 45 years. (viii) Achievement and moral judgement were the dominant factors in the personality of male and female teachers. They wanted to get material success through socially defined means.

**492.** KUMARI, U., *Intolerance of Ambiguity and Differences in Perception*, Ph.D. Psy., All. U., 1972

The aim of the study was to investigate the effect of intolerance of ambiguity on certain perceptual variables.

Three picture tests were developed and conducted on 200 college students. The tests were figure emergence test, geometrical form change test and figure persistence test. The data were analysed with the help of chi-square and t-tests.

The main findings of the experiment were: (i) Intolerance of ambiguity significantly affected spiral after-effect persistence. (ii) High intolerance of ambiguity tended to be associated with greater expectancy effects. (iii) Subjects low on intolerance of ambiguity tended to show greater speed in perception. (iv) Subjects high on intolerance of ambiguity gave lesser number of details than the subjects from the two groups. (v) Higher level of organization tended to be significantly associated with

less intolerance of ambiguity.

- 493.** KURESHI, M.A., *A Study of Adolescent Fantasy — an Experimental Enquiry into the Motives of Achievement, Affiliation, Power, Aggression and Security among Adolescents by Means of Thematic Apperception Techniques*, Ph.D. Psy., AMU, 1966

The main objectives of the investigation were: (i) to devise or adapt objective and dependable methods for measuring certain important human motives, namely, achievement, affiliation, power, aggression and security, (ii) to measure these motives in a sample of adolescents, (iii) to study the differences in the strength of these motives in relation to differences in religion, age, sex, and socio-economic status, (iv) to determine the relative dominance of these motives in the sample taken as a whole and within each of the comparison groups formed on the basis of the variables of the study, and (v) to find out possible relationship among the five motives themselves.

The method and procedure followed in the study included the preparation of a set of suitable and dependable pictures for eliciting projective responses relevant to the motives in view. The scoring procedures developed by McClelland and his associates were used for scoring and interpreting thematic apperceptive material for the identification and measurement of the five motives. The strength of these motives was studied in relation to differences of religion, sex, age and socio-economic background. Statistical techniques used for analysing the data included the technique of analysis of variance. Rank correlations were computed to study the relationship between different motives.

The major findings of the study were: (i) The Muslim subjects showed greater strength of affiliation and power motives than the Hindu subjects. (ii) The male subjects had a stronger affiliation motive and the female subjects, a stronger achievement motive. (iii) The younger subjects had a stronger aggression motive than the older subjects. (iv) Security motive was strongest among the subjects belonging to the upper socio-economic background. (v) In terms of strength, at the top of the hierarchy was affiliation motive followed by aggression, security, achievement and power motives, in that order. (vi) Among the Hindu subjects the strongest motive was security and among the Muslim subjects, affiliation. The weakest motives in these groups were achievement and aggression, respectively. (vii) The most dominant motive among the male subjects was aggression, which was

the weakest motive among the female subjects; achievement motive ranking lowest among the male subjects ranked highest for the female subjects. (viii) Aggression occupied the top position among the younger subjects but was the weakest among the older subjects. The weakest motive of the former group was power and the strongest for the latter group was affiliation. (ix) The strongest motives of the upper, middle and lower socio-economic status groups were security, affiliation and aggression, respectively. The weakest motives were achievement, aggression and affiliation, respectively. (x) Achievement and affiliation motives had a negative relationship whereas affiliation and power motives and power and aggression motives were positively correlated.

- 494.** KURIEN, P.T., *A Study of Values and Attitudes of Children with Creative Abilities*, Ph.D. Psy., Ker. U., 1981

The objective of the study was to find out the relationship between creativity variables, certain values and attitudinal variables. The hypotheses of the study were: (i) Creativity variables would correlate significantly with value variables and attitudinal variables under study. (ii) When contrasting creative groups were compared there would be significant differences in the mean scores on the value variables and attitudinal variables used in the study.

Data on eighteen experimental variables were collected through the administration of the Test of Creative Thinking, an adaptation of the Allport-Lindzey Test of Values, Mathew Materialism-Spiritualism Scale and Social Attitude Scale. The sample for the study was made up of 1,200 secondary school pupils drawn from the high school population of south Kerala by the stratified proportional sampling method. Relationships were studied by the calculation of correlation coefficients through product moment method and groups were compared by testing the significance of differences between means for large independent samples.

The main conclusions were: (i) The three creativity variables — fluency, flexibility, originality — and total creativity exhibited a differential pattern of relationship to the value and attitudinal variables studied. (ii) The four value variables which showed significant relationship with fluency (both positive and negative), showed no significant relationship with the other creativity variables. (iii) Originality and total creativity showed significant relationship with aesthetic value only, but the

relationship was negative. (iv) Of the eight attitudinal variables studied, four showed significant positive relationship with fluency, six with flexibility, one with originality and two with total creativity scores. The relationship was found to be negative and significant only for one variable — radicalism. (v) Social value and attitude towards others were the variables which differentiated the three creative groups. (vi) All the value variables, except one, discriminated between high and low creative groups.

495. LAKDAWALA, S., *A Study of Some Variables underlying Lack of Interest in Study in the School Children*, Ph.D. Psy., SGU, 1979

The major objectives of the investigation were: (i) to study the relationship of certain variables among students having interest in study (HI) and among students lacking interest in study (LI), (ii) to study the relationship between intelligence, anxiety, aggression, neuroticism, parental attitudes, home adjustment, clinical interest, youth adjustment and interest or lack of interest in study among male/female students, and (iii) to study the relationship between likes-dislikes for a particular subject, personal data, education history, interest in extra activities, reading interests, goals of life of HI and LI groups.

The sample consisted of students of Standards X and XI selected from schools located in different areas of Surat City. The total number of students involved in the study was 255 belonging to high interest group and 245 belonging to lack of interest group. Data were collected by using Desai-Bhat Intelligence Test, Self-Analysis Questionnaire, Youth Adjustment Analyser and personal information blank developed by the investigator. The data were analysed using t-test, chi-square test, and contingency coefficient.

The major findings of the study were: (i) The HI group was significantly superior to the LI group with respect to intelligence. (ii) There was a significant relationship between anxiety and interest in the study with respect to the whole sample. (iii) Parental attitudes and interest in the study were highly related in all the three cases — in the case of the total group, the male group as well as the female group. (iv) Home adjustment and interest in study were related significantly in the case of the total group and the female group, but the relationship was not significant in the case of the male group. (v) There was significant relationship between neuroticism and interest in the case of the total group and the female group,

the relationship between neuroticism and interest was not significant in the case of the male group. (vi) The relationship between aggression and interest was not significant in all the three groups. (vii) There was significant relationship between youth adjustment analyser and interest in the case of the total group and the female group but not in the male group.

496. MADHOSH, A.G.W., *Personality Correlates of Sociometric Status in Different Interpersonal Situations*, Ph.D. Psy., AMU, 1982

The objective of the investigation was to study the personality profiles of students in different sociometric classes in the sub-cultures of Jammu, Kashmir and Ladakh.

Cattell's 16 P.F. Inventory was administered to a representative sample of 300 male PUC students from Jammu, Kashmir and Ladakh. A sociometric test was used for the identification of sociometric status. The t-test was used for making intra- and inter-subcultural comparisons on different traits.

The major findings of the study were: (i) The Populars of Jammu and Kashmir region were intelligent, outgoing, warm-hearted, socially bold and relaxed, but those of the Ladakh region were conservative, socially not bold, critical but intelligent. (ii) The neglectees of Jammu and Kashmir region were dull, cool, tense, submissive and timid, but those of the Ladakh region were outgoing, freedom-lovers and sensitives. (iii) The isolates of Jammu and Kashmir region were withdrawing, tense, and shy but those of Ladakh region were liberal, outgoing and happy-go-lucky. (iv) The most desirable personality traits among the Jammu and Kashmir region students were: outgoing, socially bold, relaxed, but those for the Ladakh region were: shy, conservative.

497. MAGOTRA, H.P., *Mental Health as a Correlate of Intelligence, Education, Academic Achievement and Socio-economic Status*, Ph.D. Edu., Jammu U., 1982

The specific aims of the investigation were: (i) to isolate the factors associated with mental health and to prepare a questionnaire on them, (ii) to make a comparative study of scores of boys and girls on the factors selected and the inventory on mental health, (iii) to determine the degree of relationship between the factors selected (independent variables) and mental health (dependent variable) of the students selected for the study,

(iv) to study the effect of sex, levels of education and socio-economic status on mental health, and (v) to find out the constituents which dominated the mental health of boys and girls.

For the collection of data the tools used were General Intelligence Test (Joshi), cultural level questionnaire, socio-economic status questionnaire, health condition questionnaire and mental health inventory.

The main findings of the study were: (i) Girls scored higher in the intelligence test and in the socio-economic questionnaire than boys. (ii) Girls appeared to possess better mental health, were capable of facing the realities around them and were in a position to tide over the mental disequilibrium. (iii) The mental health of boys and girls appeared to be considerably influenced by the two factors, namely, intelligence and physical health. (iv) The mental life of boys was dominated by the feelings of depression and neurotic behaviour. On the other hand, girls were found to be suffering from a sense of insecurity and anxiety.

**498.** MALHOTRA, D.K., *An Experimental Study of Problem-solving Behaviour as a Function of Personality, Drive and Practice*, Ph.D. Psy., Pan. U., 1975

The major hypotheses of the study were: (i) Introverts would perform better than extroverts on difficult problems. (ii) Neurotics would perform better on simpler problems and stables on complex tasks. (iii) Stable introverts would perform the best and neurotic extroverts would perform the poorest. (iv) The high drive group would perform better on problem-solving than the low drive group. (v) Drive would facilitate the performance of stables and introverts in difficult problems and vice versa. (vi) Massed practice condition would show better results than distributed practice condition. (vii) No differences existed in the performance of males and females.

The sample of the study comprised 320 postgraduate students of Panjab University, equally distributed in science and humanities subjects and in the age range between twenty and twenty-five years. They were selected from a preliminary sample of 2,000 students on the basis of their intelligence and personality scores. Tools used for collecting data were Raven's Standard Progressive Matrices, Eysenck Personality Inventory, five problem-solving tasks including Match Stick Problem of Scheerer, Problem Squares of Bhatia, Farmer's Problem by Maier and Janzen, Prisoners Problem of Maier

and Janzen and Hanfman-Kassanin-Vigotsky Sorting Test. Statistical techniques such as analysis of variance, t-ratio and factor analysis were used for analysing the data.

The major findings of the study were: (i) On the variable of personality the results were constantly significant in all the five problems showing that extroverts and neurotics performed better on the first two simpler problems and introverts and stables performed better on the last three complex tasks. (ii) On the easier problems, neurotic extroverts gave the best performance, and on the difficult and complex tasks stable introverts performed the best. (iii) High drive or motivation facilitated performance on each of the five problems except on the second problem, where the low drive group had a marginal but not significant edge over the high drive group. (iv) Drive produced more deleterious and disorganizing effects, causing a stressful situation for neurotic extroverts and the resultant impairment in their performance, whereas it facilitated the performance of stable introverts. (v) On the easier problems, distributed practice group performed better, but on complex tasks massing of practice was found to be favourable. (vi) No differences were found in the performance of boys and girls except on the fifth problem where females performed better.

**499.** MALVIYA, I., *A Study of Reactions to Frustration*, Ph.D. Psy., All. U., 1968

The main objectives of the study were: (i) to investigate the pattern of reactions to frustration, (ii) to detect the most characteristic reaction in terms of the frequency in the pattern of reactions, (iii) to find out the influence of certain independent variables (age, sex, education, religion, residence, economic status and personality) in shaping the reaction pattern of the subjects, and (iv) to find out the relation between what the subject says he actually views in a frustration situation (actual response) and what he thinks he should or ought to have done in a frustrating situation (ideal response).

The subjects selected for the study were both males and females belonging to rural and urban areas of Delhi. The total sample consisted of 203 male and female subjects ranging between thirteen and twenty and between twenty-one and thirty-five years of age. Two forms of questionnaires — multiple choice and open ended — were used for data collection.

The findings of the study were: (i) The reactions of the male and the female subjects were found to be different.

The mean score was higher on reactions of males than of females. Males were also more aggressive than females. (ii) The reaction pattern of adolescents and adults was different. (iii) Inward threat and passive threat responses were lower in adolescents while on outward problems and inward problems adolescents showed higher mean scores. (iv) The score for aggressive responses was higher in the rural group, though the difference was not significant. (v) Aggressive responses of the non-Hindu group were a little higher than those of the Hindu group. (vi) The urban adolescent males were more problem-solving than the rural adolescent males. (vii) The non-Hindu adult males were considerably more aggressive than the Hindu adult males. (viii) The comparison between higher-lower economic status was more significant than the other two (higher average and lower average). (ix) The reaction to frustration was found to be affected by high scores on neuroticism and extroversion. (x) The subjects were found to be different in their reactions under actual and ideal conditions.

**500.** MANAV, R.N., *A Study of Attitudes, Self-concepts and Values of Professional and Non-professional College Students and Relationship of These Variables with Their Achievement*, Ph.D. Edu., Mee. U., 1981

The objectives of the study were: (i) to compare the attitudes, values and self-concepts of the professional and non-professional college students, (ii) to compare the attitudes, values and self-concepts of the students preparing for the engineering, medicine and teaching professions, (iii) to determine whether there were significant differences in the attitudes, self-concepts and values of professional and non-professional college students, (iv) to determine whether there were significant differences in the attitudes, self-concepts and values of the students preparing for the above three professions, (v) to ascertain the relationship of attitudes, self-concept and values with achievement of professional and non-professional college students, and (vi) to identify the factors that contributed more significantly to the academic achievement of students in a particular faculty.

The hypotheses formulated were: (i) There was significant difference in self-concepts of professional and non-professional college students. (ii) There was significant difference among the self-concepts of engineering, medical and teacher training students. (iii) There was significant difference in the attitudes of professional and non-professional college students. (iv) There was

significant difference in the attitudes of engineering, medical and teacher training students. (v) There was significant difference in the values of professional and non-professional college students. (vi) There was significant difference in the values of engineering, medical and teacher training students. (vii) There was significant relationship between students' self-concepts and achievement. (viii) There was significant relationship between students' attitudes and achievement. (ix) Students' achievement was independent of their values. The sample consisted of 890 students selected through the simple random technique. Data were collected through Bhatnagar's Self-concept Inventory, Shanta's Meri Man-yatayen and Attitude Inventory. The hypotheses were tested by applying t-test and chi-square test.

The findings of the study were: (i) The professional students perceived themselves as more confident and suffering more from the feeling of emotional instability than the non-professional students. (ii) The engineering and medical students did not differ significantly on the self-concept dimensions, achievement, withdrawal, inferiority feeling and emotional instability. They differed only on the confidence dimension. (iii) The engineering students were found to be perceiving themselves as more confident and superior to the teacher training students. (iv) The medical students perceived themselves as more suffering from the feeling of emotional instability than the teacher training students, while the teacher training students perceived themselves as more suffering from the feeling of withdrawal and tendencies to escape from the situations of life than the medical students. (v) The professional students differed significantly from the non-professional students with regard to attitudes towards teachers and society. The non-professional students had more positive attitude towards their teachers and society than the professional students. (vi) The teacher training students exhibited more positive attitude towards their teachers than the engineering students, while the engineering students exhibited more positive attitude towards family than the teacher training students. (vii) The medical students possessed more favourable responses toward family and society than the teacher training students. (viii) The professional students placed the educational value at the top, the humanistic and social values in the second and third places and the personal value at the fourth place. The non-professional students placed the humanistic value at the top, the educational and social value at the second and third places and the religious value at the fourth place. (ix) None of the self-concept variables was found to be significantly related to the students' achievement.

(x) There was no relationship between students' attitudes and achievement. (xi) None of the values was found to be significantly related to the achievement of professional and non-professional students.

**501. MATHEW, M.,** *A Comparative Study of Inferiority Feelings in Pupils with Body Defects and Without Body Defects*, Ker. U., 1974

The investigation aimed at finding out whether pupils with body defects differed from those without defects with regard to inferiority feelings.

The sample comprised 100 pupils with one type of body defect or other, selected from 6,289 students of eight representative high schools of Trivandrum educational district and 100 normal pupils selected on the basis of caste, community and income. A special inventory to measure the inferiority feelings of pupils was constructed with split-half reliability coefficients of 0.84 and 0.76 for the normal and for the group with body defects, respectively. The t-test was used to test the difference of mean scores between the two groups.

The major findings were: (i) The normal pupils were found to be low in inferiority feelings as compared to the pupils with body defects. (ii) In both the groups, females were found to feel more inferior than males. (iii) The mean inferiority scores were higher with lower professional level of parents. The mean score for the inferiority feeling was minimum for parents belonging to high professions whereas it was maximum for parents belonging to the group of labourers.

**502. MATHUR, P.,** *Personality Development of Pre-school Children of Working Mothers*, Ph.D. Psy., BHU, 1971

The primary concern of the study was to investigate the personality development of preschool children of working mothers. The study was restricted to personality development as composed of intellectual ability, social growth, and emotional disposition with the additional information on the kind of home environment to which children were exposed. The enquiry was limited to examining the influence of the three variables — CME, socio-economic status (SES), and age — on personality development.

The study was conducted with the cross-sectional method with subjects belonging to 4+, 5+ and 6+ years age. Children of both working and non-working women

were included. The sample comprised 420 normal children. There were thirty children in each of the age groups from families of high and middle SES, for the low income group, the sample size was ten for each. Equal number of children of working and non-working mothers were selected. The tools used were the NCERT Battery of Intelligence Tests, Vineland Social Maturity Scale and Children's Apperceptive Test as adopted by Uma Chowdhury. Data analysis was done using chi-square test, analysis of variance with three-way classification of variables, product moment correlation and rank correlation.

The major findings were: (i) Apprehension of CME and SES individually affecting the I.Q. and the S.Q. was not true as the two variables together produced defects on both the response measures. (ii) CME affected differentially the S.Q. levels but SES influenced both the I.Q. and the S.Q. levels of preschool children. (iii) CME was found to be a significant variable affecting preschool children's disposition on dependence, aggression, anxiety, perception of father's role and outcome. (iv) SES influenced identification, the sense of security, perception of father's role and exhortation. (v) Age made a difference in mother's and father's role perception, outcome and exhortation. (vi) CME tended to qualify the environment of a child as it ensured from mother's substitute, supervision, expectation, discipline, keeping child's company and incidence of temper tantrum. (vii) SES rendered the differences in home environment of a child on very many counts, including the father losing the temper on mother while the child was around. (viii) Age gave an indication of difference in a child's home environment resulting from the child's company, mother's indulgence in feeding, disciplinary measures, mother's browbeating, etc.

**503. MEENAKUMARI,** *Psychomotor Performance and Vigilance in Children as a Function of Age, Sex, and Motivation*, Ph.D. Psy., Pan. U., 1981

The major hypotheses of the study were: (i) Psychomotor performance and vigilance would improve with age. (ii) Girls were superior in vigilance to boys. (iii) Verbally induced motivation was expected to have a facilitating effect on psychomotor performance and vigilance. (iv) Extroversion in children was expected to be positively related with psychomotor performance and vigilance. (v) Neuroticism was expected to have a positive relationship with psychomotor performance and vigilance due to its nature as an automatic drive. (vi) In-

telligence would, have a positive relationship with psychomotor performance and vigilance.

The sample of the study comprised 240 students (120 boys and 120 girls), between the age range 10 and 14 years, selected randomly from the schools of Chandigarh and Amritsar. The students were selected on the basis of their performance on JPI, CPM and SPM. It was an experimental study, based on a three-way factorial design, involving three levels of age (10, 12 and 14 years), two levels of motivation (high and low), and two levels of sex. The tools used in the study were Junior Personality Inventory (JPI) of Mohan, Raven's Coloured Progressive Matrices (CPM), Raven's Standard Progressive Matrices (SPM), Psychomotor Performance Tests on two tasks — Backward Figure Writing (BFW), and Backward Alphabet Writing (BAW), and Visual Task involving signal detection developed by Mohan and Malhotra.

The major findings of the study were: (i) Age emerged as a significant determiner of psychomotor performance and vigilance. (ii) On pretest BFW, sex was not found to be a significant determiner of performance, but on postrest BFW, sex emerged as a significant determiner, with means clearly favouring the girls. On BAW, boys' performance was found to be significantly better, both at pretest and postrest levels. Sex was found to be a significant determiner of vigilance in pretest condition only, though means favoured girls in both the conditions. (iii) The high motivation group performed better on both the psychomotor tasks and also on vigilance task, except in the case of the postrest BFW, where the low motivation group performed significantly higher. (iv) The two factor interactions of sex and motivation for pretest BAW, of sex and age for postrest BFW, of age and motivation for pretest and postrest vigilance, and the three-factor interactions of age, sex, and motivation for postrest BFW were found to be significant. (v) Extraversion and intelligence were found to be positively correlated, and neuroticism was negatively correlated with psychomotor performance and vigilance. (vi) Correlations between extraversion and neuroticism were found to be negative. Correlations between extraversion and intelligence, and neuroticism and intelligence were not significant establishing the independence of these dimensions. (vii) Girls were found to have higher mean scores on extraversion and neuroticism, while boys scored higher on intelligence though none of the differences were significant. (viii) On extraversion the twelve-year age group scored the highest, followed by the fourteen-year and the ten-year age groups. On neuroticism, too, the twelve-year age group scored the highest but it

was followed by the ten-year and the fourteen-year age groups. On intelligence, the fourteen-year age group scored the highest, followed by the ten-year and the twelve-year groups.

**504. MEHDI, B.,** *Socio-psychological Factors in Creativity among School Children*, NCERT, 1977 (ICSSR-financed)

The study was designed to test the hypotheses that (i) rural children will differ from urban children in respect of personality traits related to creativity, (ii) the personality patterns of high and low creatives will show marked differences with regard to their environment, (iii) the home background will have a more determining effect on creativity than variations in the type of schools attended, (iv) boys and girls will differ in respect of personality traits which are related to creativity either in type or in degree or both, even when environment is held constant, (v) the creatives possess high level of energy, are introvert and independent in thought and action, and have a capacity to entertain opposing values and to tolerate apparent confusion or ambiguity in solving problems irrespective of the environment in which they are placed.

The sample consisted of 1,054 boys and 337 girls from the States of Uttar Pradesh and Madhya Pradesh, studying in Classes VII and VIII. The tools used in the study were a battery of verbal (Hindi) and non-verbal tests of creativity constructed by the investigator, a quick scoring device for identifying creativity developed by the investigator, biographical inventory developed by the investigator, Standard Progressive Matrices and Thorndike's Dimensions of Temperament (adapted in Hindi).

The findings of the study were: (i) the correlation between creativity and intelligence was significant but considerably low. (ii) Correlation of self-evaluation inventory with intelligence, as measured by Standard Progressive Matrices was  $-0.012$  for boys and  $0.101$  for girls. (iii) Both boys and girls who were creative seemed to be sociable. (iv) Correlations of self-evaluation inventory with verbal and non-verbal creativity scores were relatively low. (v) In the rural boys' sample, the correlations of biographical inventory with verbal and non-verbal tests of creativity were  $0.012$  and  $-0.118$  respectively. For urban girls the correlations obtained were  $0.198$  and  $0.133$ , respectively.

**505. MISHRA, B.N.,** *The Relationship between Per-*



*sonality Traits and Socio-metric Choices in Classroom*, Ph.D. Edu., Pat. U., 1981

The objective of the study was to investigate relationship between personality traits and sociometric choices among school-going early adolescents. The study was based on randomly selected sample of 200 early adolescents reading in Class X in eight randomly selected schools of Patna. The tools used were Adjustment Inventory for School Students by Sinha and Singh, Sociometric Questionnaire and Personality Trait Preference Scale. The situations for sociometric choices were working, playing, reading, movie-going, walking, eating, talking in leisure, sitting in the classroom and travelling. Besides, adjustment, affability, emotional stability, responsibility, likability, popularity, and beneficence were included in the personality traits.

The main findings of the study were: (i) A person with four choices, on the average, enjoyed leadership. (ii) The proportion of mutual choices appeared to be low. (iii) Adjusted subject chose and reciprocated with adjusted counterparts. (iv) Coefficients of correlation between, self-rating and rating about friend on personality characteristics appeared to be significant.

**506.** MISHRA, R.K., *Certain Personality Correlates of Need for Achievement*, D. Phil. Psy., All. U., 1967

The objective of the study was to investigate certain personality correlates of need for achievement as seen through Rorschach Ink Blot Test and TAT. The following were some of the hypotheses tested: (i) Individuals who scored high on n-achievement would score low on a measure of dominance-submission. (ii) Those high on need achievement would react to frustrating situations in terms of obstacle dominance, type of reaction, whereas the ego-defensive reactions would characterize the persons who scored low on n-achievement. (iii) The self-concept of persons with a high n-Ach would be more unified and integrated (indicated by low discrepancy scores) than that of those low on need achievement. (iv) Individuals scoring high on n-Ach would score low on a measure of anxiety. (v) The stories of the subjects high on n-Ach would be realistic, dynamic, lengthy, with more additions and changes, and would show a lesser amount of ambivalence either on the part of the narrator or the central figures. (vi) Individuals with a high need for achievement were anticipated to produce more stories of the exciting and happy types. (vii) The stories given by the group of subjects with a high n-Ach would,

predominantly, show family and social relationships, and would depict the situation as a favourable one in relation to the central figure.

The Graphic Expression Test of n-Ach was administered to a sample of 151 university students (88 males and 63 females). Individuals scoring above  $Q_3$  and those scoring below  $Q_1$  constituted the high n-Ach and the low n-Ach groups, respectively.

The findings of the study were: (i) A person with high n-Ach was less authoritarian, reacted to frustration by stressing the obstacles on the way to his goal, was less anxious and possessed good adjustment. On the Rorschach Test and TAT, he reflected himself as a person with a rich inner life and realistic relationship between his capacities and his goals. Again, the results might be seen as consistent with the theory of achievement motivation. A desire for deriving satisfaction from one's accomplishments required that a person should set his goals within an intermediate range of difficulty, would prefer tasks in which the outcome was up to his efforts and also relatively concrete. (ii) On many indices the male and the female subjects showed just the opposite trends. This reinforced the idea that the need achievement operated differently in the two sexes and was rooted in different types of the socio-cultural demands made upon males and females.

**507.** MITHAL, S.L., *A Study of Frustrated and Non-frustrated Students' Reactions towards Different Life Situations*, Ph.D. Psy., Mee. U., 1975

The objectives of the investigation were: (i) to develop a situations reactions test for graduate and post-graduate level students, (ii) to study quantitatively the reactions of the dominantly frustrated and non-frustrated students to family situations, situations relating to religion and customs, college life situations and social situations relating to law and order, (iii) to compare the reactions of both the groups of students to the different situations, (iv) to correlate different types of aggressive reactions to frustration, (v) to study sex differences in reactions, and (vi) to study differences in reactions on the basis of educational level.

A sample of 1,520 students, comprising 6.5 per cent of the total population and studying in degree and post-graduate colleges of Meerut district, was selected for administering Rosenweig Picture Frustration Study (Indian adaptation). It was a stratified sample on the basis of sex and educational level. On the basis of the scores the top twenty-five per cent and bottom twenty-five per

cent were selected as the frustrated and non-frustrated groups, comprising 810 students. The Situations Reactions Test was then administered to assess the reactions to different life situations.

The findings were: (i) The frustrated college students expressed their aggression mainly towards the external environment or towards the self while the non-frustrated glossed over situations and were not so hypersensitive as to find it necessary to ventilate their aggression in outward channels or hold themselves responsible for the frustrating situation. (ii) The two groups differed significantly in different directions; the frustrated students gave more frequent and intense extraggressive and introgressive reactions than the non-frustrated ones; the non-frustrated gave more intense and frequent unaggressive reactions. (iii) The relationship between frustration and aggression indicated an inverse relationship between GCR scores and aggression manifested in external direction while there was a moderate inverse relationship between GCR scores and aggression manifested towards self; there existed direct relationship between GCR scores and imgression which implied that frustration was related to direction and intensity of aggression, the higher the extent of frustration the greater the extent of aggression either in extraggressive direction or in introgressive direction; there was no difference between the degree and the post-graduate students with regard to relationship of extent of frustration amount and direction of aggression. (iv) The frustrated boys were predominantly extraggressive while the girls were imgressive; the differences between the boys' and girls' behaviour was significant; this was true of boys and girls of graduate level also. (v) Postgraduate students' frequent reactions and intense reactions were extraggressive while those of the degree students were imgressive. (vi) Students' reactions to religious and social situations were extraggressive while those to college and recreational situations were less extraggressive; the maximum amount of introgressive reactions were to college situations, the others, in descending order, were social, family, recreational and religious ones; the maximum imgressive reactions were in family situations, followed by recreational, college, religious and social situations. (vii) Extraggression was least in family situations when compared to the other situations; extraggression was maximum in religious situations when compared to college, recreational and social situations while when extraggressive scores were compared in college situations to recreational, and social situations, there was no difference between the first two. (viii) Comparison of introgressive reactions between family, religious and college situations, they

were least in religious and highest in college situations while comparison of reactions to family situation with recreational and social situations, the difference was negligible; the introgression was least in recreational and highest in college situations and when reactions to recreational facilities were compared to social situations, there was little difference in introgression. (ix) Students in family situations were most imgressive rather than in the other four situations; they did not differ in imgressive reactions to religious and college or religious and social situations; the students had more adaptive reactions towards recreational situations than religious, college and social situations.

**508.** MITTRA, R., *A Study of Inequity in relation to Certain Social, Psychological and Personality Variables*, Ph.D. Psy., AMU, 1980

The objective of the investigation was to verify the effects of socio-economic level, emotional adjustment and level of anxiety on the equal or equitable distribution of rewards by coworkers in a triad.

The sample of the study consisted of eighty undergraduate female students of Women's College, Aligarh Muslim University. The average age of the subjects was 18.5 years. To form the triads, the eighty subjects were randomly chosen and assigned a time to appear together for the experiment. The socio-economic level was measured using the Socio-Economic Status Scale Questionnaire (SESSQ-Urban) developed by Jalota, Pandey, Kapoor and Singh. The Aligarh Adjustment Inventory developed by Jamil Qadi was used to measure emotional adjustment of the subjects and the anxiety level of the subjects was measured on the Sinha Anxiety Scale. The data were analysed using  $2 \times 2 \times 2$  factorial analysis of variance.

The conclusions arrived at, on the basis of the findings of the reward allocation behaviour of the subjects of the study, were as follows: (i) Of the total subjects, 63.75 per cent allocated the rewards according to equality norm and the remaining according to equity norm. (ii) Out of twenty-seven subjects with 30 per cent level of performance, seven subjects allocated the reward according to equity norm and twenty according to equality norm. (iii) Out of twenty-six subjects with 50 per cent level of performance, nineteen allocated the reward according to the equality norm. (iv) Out of twenty-seven subjects with 80 per cent level of performance, three subjects allocated the rewards according to the equity norm and twenty-four subjects according to the equality norm. (v)

Ninety per cent of the low socio-economic level, low emotional adjustment and low anxiety subjects allocated the reward according to the equality norm and the remaining to the equity norm. (vi) All the low socio-economic level, low emotional adjustment and high anxiety subjects and low anxiety subjects allocated the reward according to equality norm. (vii) Twenty per cent of the low socio-economic level, high emotional adjustment and low anxiety subject allocated the reward according to equality norm. (viii) Sixty per cent of the low socio-economic level, high emotional adjustment and high anxiety subjects allocated the reward according to the equality norm and the remaining to the equity norm. (ix) Seventy per cent of the high socio-economic level, low emotional adjustment and low anxiety subjects allocated the reward according to the equality norm and the remaining to equity norm. (x) Ninety per cent of the high socio-economic level, low emotional adjustment and low anxiety subjects allocated the reward according to the equality norm and the remaining to equity norm. (xi) Hundred per cent of the high socio-economic level, high emotional adjustment, low anxiety subjects allocated the reward according to equity norm. (xii) Sixty per cent of the high socio-economic level, high emotional adjustment and high anxiety subjects allocated the reward according to the equality norm and the remaining to equity norm. (xiii) The socio-economic level, emotional adjustment and anxiety variables while considering the performance independently and interactionally did not influence the reward allocation behaviour. (xiv) The socio-economic level, anxiety and the interactions effect of the socio-economic level and emotional adjustment, socio-economic level and anxiety, emotional adjustment and anxiety as well as the socio-economic level, emotional adjustment and anxiety did not influence the reward allocation behaviour of the subjects in comparing their own performance with that of their partners whereas emotional adjustment did influence. (xv) The socio-economic level, anxiety, interaction effect of socio-economic level and emotional adjustment, socio-economic level and anxiety, emotional adjustment and anxiety, and the socio-economic level, emotional adjustment and anxiety did not influence the reward allocation behaviour of the subjects, in taking into account the quality of their performance and that of their partners whereas emotional adjustment did influence. (xvi) The socio-economic level, anxiety, interaction effect of socio-economic level and emotional adjustment, the socio-economic level and anxiety, emotional adjustment and anxiety, and the socio-economic level, emotional adjustment and anxiety did not influence the reward al-

location behaviour of the subjects in wanting to have the same partners in a further study of this type whereas emotional adjustment did influence. (xvii) The socio-economic level, emotional adjustment and anxiety independently and interactionally did not influence the reward allocation behaviour of the subjects taking into account the opinion of their partners on the allocation of reward. (xviii) Low emotional adjustment significantly influenced the reward allocation behaviour of the subjects.

**509.** MOHANTY, G., *Level of Aspiration as a Function of Sex, Socio-economic Factors and Class Performance*, Ph.D. Psy., Utkal. U., 1972.

The study was conducted on a group of male and female college students to verify the influence of sex, socio-economic status and class performance on the level of aspiration.

The sample consisted of 144 male and 144 female students of the second year degree class of some colleges of Orissa. Socio-economic Status Scale (Urban, Kuppaswamy), Advanced Progressive Matrices, Rotter's Level of Aspiration Board and Symbol Digit Tests were conducted on the subjects. Mean, standard deviation, critical ratio, product moment correlation and two-way analysis of variance were used for analysis of the data.

The findings were: (i) In goal discrepancy, goal tenacity and average performance scores the males scored significantly higher than the females in both the Level of Aspiration Board and the Symbol Digit Tests. (ii) In their aspiration and performance scores the males showed significant difference in both the tests of aspiration while the difference was significant only in the Level of Aspiration Test in the females. (iii) The males showed significant difference in their aspiration scores before and after performing the task only in the case of the Level of Aspiration Board Test, but the trend was observed in the case of the females in both the tests. (iv) Socio-economic status as a variable did not influence the level of aspiration behaviour of the subjects. (v) In their average performance scores in the level of aspiration tests, the high, middle and low achiever groups showed significant difference. (vi) A negative but not significant relationship was observed between achievement and tenacity scores of the subjects while the opposite trend was observed in the relationship between average aspiration scores and examination marks. (vii) The high, middle and low achiever groups showed significant difference in their aspiration scores before and after perfor-

mance. In their aspiration scores without the knowledge of performance, the high, middle and low achievers showed significant difference only in the level of Aspiration Board Test. (viii) The differences between the high, middle and low achiever groups in their typical and atypical shifts and rigidity were not significant. (ix) On the whole, differences between the high, middle and low achievers were statistically significant in the primary measures of aspiration either in one or both the tests of the level of aspiration, but significant differences were not observed among the three groups in secondary measures of aspiration, which implied that the level of aspiration behaviour seemed to be related to academic success.

**510.** MUDDU, V., *A Study of Some Personality Correlates of Intelligence and Creative Abilities among High School Students in Andhra Pradesh*, Ph.D. Edu., Osm. U., 1980

The objectives of the study were: (i) to measure the degree of creativity among school-going students in Andhra Pradesh, and (ii) to investigate the relationship of certain variables to creativity. The sample consisted of 474 boys drawn from various high schools in the two cities of Hyderabad and Secunderabad. Cluster and multistage sampling technique was adopted in the selection of sample. The study was designed as a quantitative empirical field study. The tools adapted and used in the study were Passi Test of Creativity, a group test of general mental ability, and High School Personality Questionnaire. A preliminary study was conducted to pretest the tools from the point of view of determining their suitability. Mean, median and coefficient of correlation were used to analyse the data.

The findings of the study were: (i) The high creative group was found to be negatively correlated ( $r = -0.096$ ) with intelligence. (ii) Weaker super-ego strength, emotional indulgence, high strength of self-sentiment and low ergic tension were positively and significantly correlated with intelligence. (iii) Creativity was found to be having highly significant relationships with fluency ( $r = 0.859$ ), flexibility ( $r = 0.675$ ) and originality ( $r = 0.777$ ). (iv) Relationships between intelligence and fluency ( $r = 0.124$ ), flexibility ( $r = 0.114$ ), and originality ( $r = 0.125$ ) were positive and significant. The association between creativity and creative abilities was stronger than the association between creativity and intelligence. (v) Personality characteristics of the high creative group totally differed from those of the low

creative group. The high as well as the low creative groups did not show any significant correlation with intelligence. (vi) Low creative boys were more fluent than the high creative boys. (vii) There was no significant relationship between the high intelligent group and the low creative group and between the high creative group and the intelligent group. (viii) The creative children were controlled, striving to get acceptance or approval, ethically standard, ambitious to do well, concerned with social images, considerate of others, foresighted, conscientious, relaxed, unfrustrated and composed. (ix) Personality characteristics of the low creative boys were: sixothyme, temperamental and desurgent. (x) The high creative boys were emotionally controlled and self-assured.

**511.** MUTHAYYA, B.C., *A Study of Level of Aspiration and Its Relation to Modes of Reaction to Frustration among Adolescents*, Ph.D. Psy., Madras U., 1960

The main objective of the study was to explore the relationship between frustration-reaction categories, E.I.M. (extrapunitive, intropunitive, impunitive) and O-D, E-D, N-P (Obstacle-dominance, ego-defensive, need-persistence) and the different aspiration measures GDS, ADS (goal discrepancy scale, attainment discrepancy scale) and shifts (typical, atypical and rigidity).

The level of aspiration was measured through six tasks, viz., card sorting, Rotter's Level of Aspiration Board, finger dexterity, symbol digit, computation and letter cancellation. Madras Picture Frustration Study developed by the investigator on the lines of Rosenweig's P.F. Study was used to measure frustration. An interview schedule was used to find out the subject's reaction to changes in experimental situations. The major hypotheses framed were: (i) Extrapunitive reaction was associated with higher positive aspiration patterns. (ii) Intropunitive reaction was associated with low positive aspiration patterns. (iii) Impunitive reaction was associated with negative aspiration patterns. Two hundred and fifty-two boys and girls in the age range thirteen to seventeen were selected from two schools, one in Madras and the other in Coorg.

The major findings were: (i) Aspiration was set above the past performance in all cases. (ii) The educational level had no influence over one's aspiration level. (iii) Flexibility was more in the lower standards (IX and X) than in the higher standard (XI). (iv) Rigidity, after success, was more in standards IX and X and after failure in

Standard XI. (v) There was negligible correlation between aspiration and school achievement. (vi) The past performance had significant correlation with the future aspiration. (vii) Subsequent performance significantly correlated with aspiration. (viii) Significant but poor correlations were obtained between frustration-reaction categories and measures of aspiration independently. (ix) Aspiration patterns (high positive, low positive and negative) had significant association with the frustration-reaction categories (E, I and M), respectively.

**512. NAGALAKSHMI, B.,** *A Study of Perceived Parental Behaviour and the Level of Academic Motivation of Class IX Students*, Ph.D. Edu., And. U., 1982

The main objectives of the investigation were: (i) to study the general background of Class IX students in terms of their age, sex, parental education, occupation and income, the size of the family and the child's ordinal position, (ii) to study the behaviour of parents as perceived by their children, (iii) to study the academic motivation of the students, and (iv) to study the relationship between the parents' perceived behaviour and students' academic motivation.

The sample consisted of 556 students of Class IX from ten classes of ten Telugu-medium schools. The tools for data collection were a personal data sheet, parental behaviour inventory constructed by the investigator and the Telugu version of Junior Index of Motivation of Frymier. Descriptive statistics, t-test and product moment coefficient of correlation were used for data analysis and hypothesis verification.

The major findings were: (i) The mean JIM scores for boys and girls were 89.77 and 88.24, respectively. (ii) The average age of the student was fourteen years, that of the father forty years and that of the mother thirty-seven years. (iii) About 69 per cent of the students belonged to large families with more than three children. The first-borns were 26.35 per cent; 20.74 per cent children were last-born and 52.89 per cent were middle born. (iv) Father's education ranged between Class VI and S.S.L.C. while mothers were educated upto Class V. (v) The average student was from middle and lower middle class. (vi) Boys and girls did not differ significantly in academic motivation. (vii) The students from small families had higher academic motivation than those from large families. (viii) The ordinal position, father's education, mother's education and parents' income did not influence students' academic motivation.

(ix) Academic motivation correlated significantly with mother's behaviour on the dimension of acceptance-rejection but not with father's behaviour on the same dimension. (x) On the dimensions of fostering independence-dependence, fostering achievement-non-achievement, parents' behaviour did not show any relationship with students' academic motivation. (xi) Academic motivation was related to democratic-authoritarian discipline by father and mother in the case of girls but not in the case of boys. In the total sample of boys and girls, academic motivation was related to the discipline dimension of mother but not that of father.

**513. NAGAR, U.B.,** *Role of Note-taking, Rehearsal and Test Events on Immediate and Delayed Production of Verbal Materials*, Ph.D. Psy., BHU., 1979

The investigation was concerned with (i) exploring the intervening behavioural patterns between an input of information, encoding thereof, and the end product in the shape of an output, and (ii) verifying, experimentally, the differential roles of note-taking, rehearsal and intermediary test events on the recognition and immediate and delayed written reproductions of verbal materials.

The specific areas of the study were listed in the form of nine hypotheses. The sample consisted of 384 students (equal number of boys and girls) of Classes IX and X of different schools of Varanasi. The sample was divided into eight sub-groups; each group followed a  $2 \times 2 \times 2$  factorial experimental design with three possible ways of analysing the data. Each group contained forty-eight subjects for each treatment condition with an equal representation for both the classes and sexes. A tape-recorder containing three passages of 450 words each and 136 ideas each of 5 minutes' duration was used as verbal material. A global test containing multiple choice test items based on the contents of three instructional passages, General Mental Ability (Mohsin), a test of study habits and attitudes, students' problem checklist were also administered separately in small groups. The t-test and the Mann-Whitney U Test were used in addition to the  $2 \times 2 \times 2$  factorial analysis for analysing the data.

The findings of the study were: (i) There was significant difference between the retention of those subjects who rehearsed the instructional material and those who did not because of the consolidation of the instructional material in the former case. (ii) Test events led to greater retention of instructional materials. (iii) The joint effect of note-taking and test events enhanced retention. (iv)

Immediate recall of instructional material was no better when compared with delayed recall thereof. (v) The performance of Class X was better than that of Class IX because the students of higher classes got more opportunities of assimilating cognitive elements. (vi) Boys showed better retention. (vii) There were positive and significant correlations of global test scores and recall with other measures of retention. (viii) There were negative inter-correlations between the different areas of the student problem checklist and criterion measures indicating that those with more problems had difficulty in retaining the instructional materials.

**514. NAIR, P.M.,** *Personality Characteristics of Creative High School Pupils*, Ph.D. Edu., Ker. U., 1975

The objective of the study was to solve the problem of identification of the creative pupils in the classroom by simple observation of the adjustive nature of their personality. The hypotheses formulated for the study were: (i) The creative pupils differ significantly from the non-creative pupils in their adjustment dimensions of personality, self as well as social. (ii) The profile of the adjustive traits of the creative pupils was different from that of the non-creative pupils. (iii) The creative pupils score significantly higher than the non-creative pupils in all the positive adjustment variables. The creative pupils score significantly lower than the non-creative pupils in the negative adjustment variables.

The positive adjustment variables subjected to experimentation were self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, freedom from withdrawing tendencies, freedom from nervous symptoms, social standards, social skills, freedom from antisocial tendencies, family relations, school relations and community relations. The only negative adjustment variable under experimentation was anxiety. The test of creative thinking developed by the researcher included fluency, flexibility, originality, elaboration, sensitivity to problems and redefinition. The variables were measured using standardized tests.

The major findings were: (i) The creative pupils were found to differ from the non-creative pupils in respect of the adjustment variables, viz., covert sense of personal freedom, freedom from withdrawing tendencies, freedom from antisocial tendencies, school relations, community relations and anxiety, to a high degree. In respect of the variables comprising self-reliance, sense of personal worth, feeling of belonging, freedom from nervous symptoms, social standards and social skills the

creative pupils differed from the non-creative to a comparatively lesser degree. (ii) In general, the profile of the adjustive traits of the creative pupils was found to differ significantly from that of the non-creative pupils. (iii) The non-creative pupils exhibited the highest degree of the feeling of anxiety whereas the creative pupils exhibited the lowest degree. (iv) The creative pupils were better adjusted than the non-creative pupils, personally as well as socially.

**515. NALINIDEVI, G.,** *Development of Number Concept in Young Children*, Ph.D. Psy., SVU, 1976

The main objective of the investigation was to study the development of the number concept in young children in relation to age, schooling, mental ability and the socio-economic and educational background of the family.

Children in the age group 4–7 years in Tirupati Municipality constituted the population of the study. The sample comprised 288 school-going and 288 non-school-going children. A  $2 \times 3 \times 3 \times 4$  design with schooling/no schooling, materials, operations and age levels was used. Three operations, namely, discrimination, seriation and numeration were studied employing three materials — blocks (three-dimensional), slate (two-dimensional) and sticks (unidimensional). The subjects were tested individually using the same procedure in three sessions with an interval of one week between any two sessions. The subjects were administered a numerosity test, a number conservation test and Draw-A-Man Test.

The major findings of the study were: (i) Discrimination, seriation and numeration among children appeared in that order. (ii) Children were able to discriminate successfully by the time they reached four years of age. Seriation was mastered between five and six years of age and numeration was seldom attained before seven years of age. (iii) There were significant differences between the school-going and the non-school-going subjects. The non-school-going subjects performed poorly on numeration. (iv) The non-school-going girls performed poorly in comparison to boys at four and five years of age levels with regard to discrimination and seriation operations. (v) The non-school-going subjects' performance was uniformly poor with regard to numeration. (vi) There were no significant differences between the school-going and the non-school-going subjects with regard to discrimination. (vii) Differences in mental ability seemed to play a significant role in the acquisition

of the number concept. Children with higher levels of mental ability appeared to perform better on seriation and numeration. (viii) The differences in the socio-economic and educational background of the family were found to significantly affect the seriation and numeration operations. (ix) Children were able to perform the operations better when more perceptual cues were available to them to discriminate or to seriate or to numerate.

- 516. NANGIA, S.,** *The Personality Characteristics and Self-esteem of Indian Sportsmen and Sportswomen*, Ph.D. Psy., Luc. U., 1980

The objectives of the study were: (i) to identify the personality factors associated with high and low performing sportsmen and sportswomen in the two popular games of badminton and table tennis, (ii) to identify the need pattern of the extremely high performers and that of the low performers with reference to sex and game, and (iii) to find out the difference in the self-esteem of the extremely high performers and the self-esteem of the low performers, both male and female, in table tennis and in badminton.

The sample comprised 171 sports persons (eighty-seven table tennis and eighty-four badminton). Of these, ninety-one were males and eighty females. The design of this study was a 2×2×2 factorial design, performance, sex and game being the three main variables, each having two levels. Performance was divided into extremely high and low, both sexes of sports persons were taken and two games, table tennis and badminton, were studied. The 16 PF Test, TAT and stories developed by the Bureau of Psychology, Allahabad, were used for collecting data. The Mann-Whitney U Test was used to analyse the data.

The findings were: (i) The high performers were more intelligent, emotionally stable, dominant, surgent, suspicious, shrewd, self-sufficient and tense; had higher self-concept and control and were more reserved, shy, tough-minded, practical and placid. (ii) The high performers had a higher need for achievement, aggression, dominance, recognition and sex, and a lower need for abasement, play and affiliation. (iii) The self-esteem of the high performers was higher than that of the low performers. (iv) The personality factors of the sportsmen were different from those of the sportswomen; the sportsmen were more tender-minded, anxious, introvert and subdued. (v) The sportsmen had a higher need for recognition, aggression and sex. (vi) The self-esteem of

the sportsmen was not higher than that of the sportswomen. (vii) The table tennis players were more affected by feelings and were trusting, tense, introvert, adjusted, tenderminded and emotional than the badminton players. (viii) The table tennis players were higher in need abasement, recognition, affiliation and play. (ix) The self-esteem of the table tennis players was not higher than that of the badminton players.

- 517. NARAIN, K.,** *Mental Development of Children from Two Plus to Five Years of Age*, Ph.D. Psy., All. U., 1969

The aim of the investigation was to study the mental development of children from two plus to five years of age. The following hypotheses were formulated: (i) Accuracy in speech increased with age. (ii) As age advanced understanding of words and instructions increased. (iii) Vocabulary enlarged with the advancement of age. (iv) Girls of the same age had more fluency and eloquence whereas boys were quicker in following the meanings of words. (v) Schooling had a very favourable influence on the development of language. (vi) A richer environment and better familial background with a high socio-economic status led to growth of vocabulary and all-round language development. (vii) As the child advanced in age his capacity to adapt himself to surroundings increased. (viii) His ability to recognize figures, forms and shapes increased with age. (ix) His memory span increased with age. (x) Sex was a factor influencing the development of adoptive behaviour. (xi) Schooling provided better exercise and opportunities for the development of adoptive behaviour. (xii) The socio-economic status of the child's family affected favourably or otherwise the development of the child's adoptive behaviour.

The sample consisted of three hundred children (150 boys and 150 girls) from Allahabad and its suburbs. They were selected on the basis of sex, socio-economic conditions and schooling. The tests used for measuring language development were the Action-Agent Test, Comprehension, Following the Instruction, Picture Cards, Missing Parts, Naming, Identification and Use of Objects, and Recognizing the Use of Objects. For measuring adoptive behaviour, Form Discrimination, Number Concept, Immediate Memory Span, Spontaneous Drawing, Draw-A-Man Test, Imitative Drawing, Incomplete Man, Copy of Forms, Tracing, and Porteus Maze were used. These tests were originally developed by Gesell and adapted by the National Council of Edu-

cational Research and Training for Indian conditions. Due to the limitation of time, it was not possible to use Gesell's Scale in its entirety. A selection of most of the principal items from the language and adoptive behaviour scales was made. The total time for testing was approximately three hours per child. Chi-square was used for analysing the data and qualitative analysis was also done.

The findings were: (i) Age was found to be a factor in spontaneous drawing aimed at estimating the ease of adjustment. Advancement in age facilitated better adjustment and brought more flexibility in adoptive behaviour. In Draw-A-Man Test, too, as children advanced in age they drew the man more recognizably than the younger children. In Completing the Man children older in age more frequently completed fingers, necklines, legs, arms and hair than the younger age groups. In imitating lines the children senior in age drew straight and equal lines more in number than those younger in age. In copying forms five-year-old children were efficient in drawing a greater number of straight lines than the children of relatively lower age groups. The frequency of children in tracing correctly on the lines, cross and diamond, was higher for the five-year-age group than that of other groups. (ii) Porteus Maze, analysed in terms of failures, errors and time taken gave a vague picture of children's adoptive behaviour. Age, as a whole, influenced the development of creative activity and was found associated with intellectuality. (iii) Girls showed greater adjustability than boys as measured by spontaneous drawing because the shape of drawing was more circular, centre-oriented on the page, and recognizable in the case of girls than it was in the case of boys. Girls were again superior to boys in drawing a man. But in imitating lines and crossing the difference was negligible. In completing the drawing of man girls yielded responses definitely superior to those of boys with the difference that the number of girls giving no response was higher than that of boys giving no responses. In copying forms boys drew greater number of straight lines though their performances were somewhat similar in tracing as well as in Porteus Maze. Girls were slightly better adoptive in the totality of their performance than boys. (iv) When children were given free hand in drawing, schoolers did better than non-schoolers, as was evident from the shape of drawing of schoolers and its being more recognizable. (v) In drawing a man schoolers stood far superior to non-schoolers viewed from every angle. In imitating lines and cross, school-going children achieved greater success particularly in drawing straight lines than did their non-

schooled counterparts. In completing man also, children with schooling experience scored higher than those with no such experience. (vi) When drawing straight and equal lines in copying forms, those in contact with school stood better than those with little or no contact with school. The difference between schoolers and non-schoolers persisted even in tracing though the difference was negligible in the Porteus Maze. (vii) Children from the higher socio-economic status, when given an opportunity to draw according to their wishes, showed greater development than those from relatively lower strata of society as judged from the shape of drawing and its recognizability. The performance on Draw-A-Man gave support to a similar conclusion. In making the lines and the cross, as indicated by imitative drawing, children again differed in their scores as a result of variations in the socio-economic status: those from the higher strata of society stood definitely better than those from the lower ones. In completing the man greater score of adoptability followed the higher socio-economic status. In copying forms of various shapes there was a clear indication of progress favouring the higher socio-economic strata. (viii) Judged from the criterion of drawing straight and equal lines children from more prosperous homes and enriched environment were marked with greater advancement than those with the feeling of deprivation caused by poverty. In tracing a sort of drawing on the line, higher socio-economic status was associated with high degree of adoptability. Performance, as measured by Porteus Maze, however, did not lead to any definite conclusion.

**518.** NARULA, K.S., *A Study of Achievement Motivation, Personal Preferences, Perception, Anxiety, Risk-taking Behaviour and Other Correlates in relation to Intelligence, Socio-economic Status and Performance of the Prospective Secondary School Teachers of Orissa State*, Ph.D. Edu., MSU, 1979

The major objectives of the study were: (i) to measure achievement motivation, personal preferences, perception, anxiety, risk-taking behaviour and other correlates such as sex, age, place of residence, entering qualifications, economic status, teaching experience and the outlook of teacher trainees in relation to their intelligence, socio-economic status and performance, (ii) to examine the extent to which these variables explained the variance in achievement, intelligence and socio-economic status of the subjects, and (iii) to examine the predictors of achievement motivation, academic performance and



other variables.

A sample of 608 men and women students of education, studying in six government teachers colleges of Orissa, in the age group 21 to 30 years and above, was selected out of the total population of 1,300 trainees undergoing B.Ed. training during the year 1976-77. The tools of research were Thematic Apperception Test of measuring achievement motivation (n-Ach), Edwards Personal Preferences Scale, Self Report Inventory, Sinha's Anxiety Scale, Raven's Standard Progressive Matrices, Socio-Economic Status Scale of Kuppuswami and a few questionnaires. The statistical techniques used were descriptive statistics, product moment correlation and multiple regression analysis.

The main findings were: (i) The mean measure of achievement motivation was 7.64 with a standard deviation of 11.848. (ii) The age of the subjects was a factor discriminating between the verbalized categories of n-Ach. (iii) Males and females differed as regards personality needs. Mean scores in heterosexuality and n-Aggression for males were significantly higher than those for females. (iv) Male and female trainees differed in their aggregate means for self-perception scores. (v) Male teachers showed more anxiety than female teachers. (vi) Sex was not found to influence academic performance. (vii) Males scored more than females on measures of n-Ach. (viii) Intelligence and anxiety did not show any relationship. (ix) Intelligence was not found to have relationship with n-Ach., affiliation need, succorance, endurance, exhibition, n-Dominance, but intelligence was found to be related to change category as measured by E.P.P.S. and n-Aggression. (x) Intelligence and perceptions, by and large, did not show any relationship and the same was the case with intelligence and performance. (xi) n-Ach as measured by TAT pictures of Mehta differed significantly between the subjects of high and average intelligence. (xii) Academic performance was found to be related to parents' education and occupations, but not to parents' income. It was, however, found to be influenced by the rural-urban nature of residence.

**519.** NATHAWAT, S.S., *A Study of Creativity in Relation to Mental Health*, Ph.D. Psy., Kur. U., 1977

The major objectives of the investigation were: (i) to study the pattern of adjustment in the areas of home, health, emotion, and school among the high creative, moderate creative and low creative individuals, (ii) to measure mental health in these groups, (iii) to find out

the extent to which neurotic trends such as free floating anxiety, obsessional traits and symptoms, phobic anxiety, somatic anxiety, neurotic depression and hysterical personality traits were associated with creative behaviour, and (iv) to evaluate ego-strength by barrier and low penetration scores in these subjects.

The initial sample of the study consisted of 320 adolescent boys of Class X selected randomly from the high schools of Kurukshetra. They were administered the Wallach-Kogan Test of Creativity. The sample was then classified as high, moderate and low creative groups on the basis of 75th and 25th percentiles. After the classification, 240 adolescent boys were retained as the final sample of the study with 80 subjects in each of the three groups. They were administered four tests, namely, the Saxena Adjustment Inventory, the Maslow Security-Insecurity Inventory, the Middlesex Hospital Questionnaire and the Rorschach Psychodiagnostic Test.

The findings of the study were: (i) No significant differences were found in the areas of home, health, social, emotional and school adjustment among the high, the moderate and the low creative individuals. (ii) The high creative individuals were not found different from the low creative and the moderate creative individuals in insecurity-security feelings. The same relationship was observed between the moderate and the low creative individuals. (iii) The high creative individuals were not different from the low and the moderate creative individuals in the level of neuroticism as well as in neurotic manifestations such as free floating anxiety, observations, phobic anxiety, somatic anxiety, neurotic depression and hysterical personality traits. The same pattern of relationship was seen between the moderate and the low creative individuals. (iv) The high creative individuals were significantly higher in positive body image or ego-strength (barrier score) than the low and the moderate creative individuals. However, the low creative individuals were at the same level of body image in terms of barrier score. (v) The high creative individuals were different in body image penetration characteristics as compared to the low creative individuals. The same relationship was found between the moderate and the low creative individuals. However, no significant differences were found between the high and the moderate creative individuals on penetration scores.

**520.** NINDRU LEHAL, *A Study of Certain Personality and Demographic Correlates of Sex Role Attitudes amongst College Female Students*, Ph.D. Psy. Pan. U., 1981

The major hypotheses of the study were: (i) There would be a positive correlation between self-oriented sex-role attitudes and radicalism, sex-role attitudes and internal locus of control, and with achievement motivation. (ii) There would be a negative correlation between other-oriented sex-role attitudes and attitude towards married women taking up jobs. (iii) There would be a significant difference between the sex-role attitudes of subjects having working mothers and subjects with non-working mothers. (iv) A significant relationship was there between subjects' sex-role attitudes and mothers' educational level. (v) Sex role attitudes would be significantly related to the socio-economic class.

The sample for the study comprised 498 T.D.C. Parts II and III female students between the age-range of 16 to 22, selected through stratified random sampling technique, from four women colleges (two of Chandigarh, one of Amritsar and one of Patiala). The study investigated the relationship between sex-role attitudes and certain personality and demographic variables. The tools used for collecting data were Fand's Sex-role Inventory, F.T.I. (French Test of Insight) developed by French, the Internal-External Control Inventory (Revised form of Liverant's Scale), Qamar Hasan's Ego-Strength Scale, Sinha's Anxiety Scale, Vasudeva's Conservatism/Radicalism Scale, a scale to measure attitude towards working married women by Vasudeva, G.J. Singh's S.E.S. Scale, and a personal data sheet to measure sex-role attitudes, achievement motivation, internal-external locus of control, ego strength, anxiety, etc. Statistical techniques used for analysing the data were coefficient of correlation, and analysis of variance.

The main findings of the study were: (i) More conservative females tended to be more traditional in sex-role attitudes. (ii) The more other-oriented a woman was in her sex-role attitudes, the more anxious she was likely to be. (iii) More traditional attitudes in sex-role led to higher external locus of control. (iv) Females scoring high on ego-strength tended to be high on the non-traditional sex-role attitudes. (v) Those having the other-oriented sex-role attitudes tended to have negative attitude towards married women taking up jobs. (vi) Females high on need achievement were found to be more self-oriented in sex-role attitudes. (vii) Females having career mothers and mothers with higher educational attainment were significantly more self-oriented in their sex-role attitudes and vice versa. (viii) The relationship between father's education and occupation with sex-role attitudes was not found to be significant. (ix) Females belonging to joint family structure were found to be more traditional or other-oriented in their

sex-role attitudes. (x) The position of females in the family had no impact on the sex-role attitudes. (xi) Significant relationship were not found between the SES of the females and their intentions for higher education and their sex-role attitudes. (xii) There was no impact of who decided for the education on the sex-role attitudes of the individual for whom the decision was made. (xiii) Females who intended to become housewives were more traditional or other-oriented in their attitudes on the sex-role. (xiv) The sex-role attitudes of females were closely related to their personality and environment.

**521. OJHA, R.K., *Intelligence and Intellectual Stimulation during Adolescence*, Ph.D. Psy., AMU, 1962**

The objective of the investigation was to study the influence of intellectual stimulation on intelligence during adolescence.

Three local higher secondary schools were classified according to the intellectual stimulation provided by them on the basis of one external and three internal criteria. The external criterion was based on five years' progress reports and the internal criteria were based on factor patterns obtained from the correlation matrix of examination marks. Three groups of forty-seven students from each of the three schools, matched on age, sex and socio-economic status, were administered Vernon's Non-verbal g test, Vernon's Block Design Test, Verbal Intelligence Test (Ray-Chowdhury-Ojha), Vernon's Pattern Drawing Test, Vernon's Graded Arithmetic Test and Standard Progressive Matrices. Students high and low on these measures were compared using critical ratios for identifying the effect of intellectual stimulation on intelligence.

The study revealed positive relationship between intellectual stimulation and different aspects of intelligence measured by Vernon's Non-Verbal g test, Vernon's Pattern Drawing Test and Vernon's Graded Arithmetic Test only.

**522. PADMINI, T., *Fostering Cognitive Development in First Standard Pupils — an Experimental Study*, Ph.D. Edu., Mys. U., 1980**

The main objective of the study was to develop and try out, experimentally a programme for fostering cognitive development in first standard pupils. The additional objectives of the study aimed at relating (i) the initial level of cognitive development status to the socio-economic

status and pre-school education of the pupils, (ii) the gains in cognitive development status to the factors of age, sex, pre-school education, socio-economic status, institutional variations and intelligence of experimental group pupils, and (iii) the final level of cognitive development status to the academic achievement of both experimental and control group pupils.

The Solomon four group design was employed for the experiment with two experimental groups, one pre-tested and the other non-pretested and two control groups, one pretested and one non-pretested. One hundred and twenty pupils studying in Standard I with Kannada as their mother tongue selected from five primary schools in Mysore City constituted the total sample for the study. They were randomly divided into two equal groups, experimental and control, in each school, each being further split into two halves in a systematic order to form the pretested and non-pretested sub-groups. After the pretest the two experimental groups were given the experimental treatment consisting of the action programme designed for fostering cognitive development, while the two control groups were allowed to undergo normal school activities during the period. The action programme which was based on Piagetian theory of cognitive development consisted of a large number of instructional situations focussed on selected cognitive concepts such as length, area, volume, weight, belongingness, spatial relations and temporal relations and involving cognitive operations such as identification, generalization, comparison, discrimination as appropriate to the age group five to seven designed after having discussions with teachers and psychologists and an initial tryout. These activities were grouped and organized into forty sessions of thirty to forty minutes each. The experimental groups received the action programme in two sessions per week extended over a period of six months. The posttest was given to all the four groups at the end of the experiment. The various tools used in the study were the Mysore Cognitive Capabilities Test (Padmini and Nayar) which was administered both at the beginning and at the end of the experiment, WISC, the revised Socio-Economic Status Scale (Urban, Kuppuswamy) and the final examination report of students in their respective schools for measuring academic achievement. The t-test, analysis of variance, analysis of covariance, chi-square test and contingency coefficient were used to analyse the data.

There were no significant initial differences in cognitive development status between the pretested experimental and control groups. Also there was no pretest sensitization favouring greater gains from the special ac-

tion programme.

The findings of the study were: (i) The experimental group was significantly better than the control group on cognitive development status at the end of the experiment. (ii) Sex differences were not significant in respect of gains in cognitive development status. (iii) The age level of the experimental group pupils within the range studied did not significantly affect the experimental treatment. (iv) Cognitive development status was positively related to socio-economic status but not related to preschool education. (v) Differences in cognitive development status gains of the experimental group in relation to intelligence were significant. (vi) Variation in institutions did not affect gains in cognitive development status. (vii) Significant relationship existed between the cognitive development status and the academic achievement.

523. PAL, A., *A Comparative Study of Some Psychological Characteristics of the Creative High and the Creative Low Socio-economic Groups of College Students*, Ph.D. Psy., IIT, Kharagpur, 1980

The objective of the study was to examine whether and how far the discrepancy in socio-economic status (SES) contributed to differences in certain non-cognitive characteristics among highly creative college students (both males and females). The non-cognitive characteristics considered were altogether forty-five in number and were selected from five areas, namely, (i) interest (ii) achievement motivation (iii) value systems, (iv) adjustment, and (v) temperamental traits.

The Torrance Tests of Creative Thinking—Verbal form-A (TTCT) was used for identifying the creative students. Since high scores on the test indicated higher degrees of creativity, the top 33.3 per cent of the scores were identified as creative. The total number of such students was 250. These 250 creative students were divided into two groups with the help of a socio-economic status schedule devised by the investigator. The number of subjects after dichotomization (high and low) got reduced to 210 because of the exclusion of the middle socio-economic group in the sample. For measuring interest, achievement motivation, value systems, adjustment and temperamental traits of the sample, Kuder Preference Record (form CM-vocational), Mukherjee's Sentence Completion Test, Allport-Vernon Study of Values, Bell's Adjustment Inventory and Cattell's 16 PF Questionnaire were used, respectively. The total

number of subjects, however, ultimately got reduced to 191 owing to absenteeism during the testing programme and rejection of test data of some who seemed to be casual and erratic in test-taking behaviour. Of this number, 103 subjects (50 males 53 females) belonged to the HSE group and 88 (40 male students and 48 female students) to the LSE group.

The major findings of the study were: (i) Of the nineteen significant results (t-values) noted in the case of males, three were related to interest, three to achievement motivation, six to values, two to adjustment and five to temperament. (ii) In fifteen out of the nineteen significant values, male students belonging to the HSE group had higher mean scores than those of the LSE group. (iii) Of the six significant t-values obtained for female students two were related to interests, one to achievement motivation, one to value area and two to temperament. (iv) The six significant t-values noted in the case of females did not, however, show any clear pattern of difference between the creative females of the two socio-economic groups. (v) The results of profile-analysis showed that difference between the patterns of inter-variable distances obtained for the two socio-economic groups were significant for the three areas, viz., interest, achievement motivation and temperament. This result was true for both male and female students. (vi) The two remaining areas, namely, values and adjustment, however, did not produce statistically significant difference in their inter-variable distances for the subjects of the two socio-economic groups; the result was true for both male and female students.

524. PANDEY, A., *A Study of Adjustment, Personality, Values and Vocational Interests of Supernormal and Normal Adolescents*, Ph.D. Psy., Agra U., 1970

The investigator attempted to study adjustment, values and vocational interests of supernormal and normal adolescents. The study aimed at providing information to teachers, parents and guidance workers with regard to the characteristics of supernormals and normals.

Four hundred adolescents of Classes X and XII varying in age from 15 to 18 years served as the sample for the study. The sample was drawn from 1,410 adolescents of Classes X and XII using two intelligence tests—one verbal and the other non-verbal. Half the subjects in each age group were supernormals and the other half normals. Each age group had 100 subjects. The tools used were an adjustment inventory, vocational interests

blank and an inventory to measure values. Critical ratio, F-ratio and coefficient of correlation were the statistical techniques used for data analysis.

The major findings were: (i) Supernormals and normals did not differ in home, health and emotional adjustments. (ii) Normal adolescents of 15, 17 and 18 years had significant superiority over supernormal adolescents of the same ages with regard to social adjustment. (iii) Increase in age and education was normally accompanied by betterment of adjustment in all areas. (iv) Supernormals and normals did not differ significantly with regard to aesthetic and religious values. (v) Supernormals had superiority over normals in the case of theoretical, economic and political values. Normal adolescents had superiority over supernormal adolescents in the case of social values. (vi) Increase in education and age was accompanied by an increase in priorities for political, theoretical, economic and social values. (vii) Supernormals developed better vocational interests than the normals. (viii) Class XII adolescents developed better vocational interests than Class X adolescents. Increase in age, education and intelligence brought betterment to vocational interests.

525. PANDEY, B.B., *A Study of Adjustment Problems of Adolescent Boys of Deoria and Their Educational Implications*, Ph.D. Edu., Gor. U., 1979

The study aimed at (i) finding out the adjustment problems of boys in health, social, aesthetic and emotional areas, and (ii) determining the amount of inter-correlation between adjustment, the level of aspiration, and achievement.

An adjustment inventory containing questions on the five areas (health, social, school, aesthetic and emotional) was prepared. The final form of the inventory was given to 500 students studying in Class XI along with the test on the level of aspiration. Marks secured by the students at the high school examination were used as achievement scores.

The findings of the investigation were: (i) Rural students secured better points in emotional, health, and school adjustment areas; (ii) Urban students secured comparatively better marks in the aesthetic adjustment area. (iii) Significant relationship existed between adjustment, the level of aspiration and achievement. (iv) Urban students were facing difficulty in adjustment in school, health and emotional areas.

526. PANDHARIPANDE, P.S., *A Study of Socio-cul-*

*tural Correlates of Achievement Motivation*, Ph.D. Soc., Nag. U., 1976

The objective of the research was to study the socio-cultural correlates of achievement motivation.

The concept of achievement motivation was dichotomized as need achievement (n-Ach) and value regarding the motive in question (v-Ach). The antecedent conditions investigated were the achieving status of schools, socio-economic status of schools, socio-economic status of fathers, caste, sex and ordinal position of children, child-rearing practices of parents, perceptions of children in respect of their parents and value orientations of children. On the basis of the achieving status (AS) and socio-economic status twenty schools were stratified and a random sample of 675 boys and girls of Class IX was selected. Fathers and mothers of pupils of high and low groups on n-achievement and similar groups of v-achievement formed the sample for the second part of the research. The tools used in the study were the TAT, Edwards Personal Preference Schedule (EPPS), Socio-Economic Status Scale (Kuppuswami), interviews (for child-rearing practices), Bronfenbrenner's Parent Behaviour Scale (BPB), Value Orientation Scale (Pareek and Chattopadhyaya) and Religious Value Orientation Scale constructed by the investigator. Analysis of variance (least square method) was primarily used for the treatment of results.

A number of relationships were established and certain antecedent conditions were identified for the development of n-achievement and v-achievement. The major findings were: (i) The mean n-Ach scores of the subjects of the middle class were significantly higher than those of the lower class subjects. (ii) The mean achievement scores of the higher castes were significantly different from those of the depressed caste persons. (iii) There was no significant difference between the scores of boys and girls on n-Ach and v-Ach. (iv) The order of birth did not affect their standing on achievement motivation. (v) Parents appeared to impose fewer restrictions on children with high n-Ach. (vi) Mothers and fathers of the children with high n-Ach were found to be less rewarding and less punishing than those of the children with low n-Ach. (vii) Certain early training practices appeared to be related to the development of n-Ach. (viii) The boys with high n-Ach perceived their parents as less loving, less punishing and less demanding than the boys having low n-Ach; the pattern was found somewhat different for girls. (ix) The children with high n-Ach were not more liberal, non-authoritarian and less fatalistic in their outlook. (x) Secularity of religious out-

look was not observed to be related to achievement motivation.

**527. PARAMESH, C.R.**, *A Study of Creativity in Relation to Extraversion, Emotionality, Body-image and Values*, Ph.D. Psy., Madras U., 1970

The specific objectives of the study were: (i) to ascertain the level of introversion among adolescents in relation to their creativity, (ii) to find out the difference in neuroticism among individuals of different creativity levels, (iii) to find out the anxiety level among adolescents of different creativity levels, (iv) to compare the body-image characteristics of high creative and low creative individuals, and (v) to analyse the theoretical and aesthetic values among high creative and low creative adolescents.

The sample for the study consisted of 216 adolescent boys selected from among those studying in different high schools in the city of Madras. The mean age of the population was 15.46 years. For measuring creativity an adapted version of the Wallach Kogan Battery of Creativity Instruments was used. For measuring the theoretical and aesthetic values a new scale of values was developed based on Allport-Vernon Lindzey Study of Values. Other instruments used in the study were the Standard Progressive Matrices Test, Eysenck Personality Inventory, Taylor Manifest Anxiety Scale, and Rorschach Test.

The main findings of the study were: (i) The high creative adolescents were neither more nor less introvert than the low and moderate creative adolescent boys. The same relationship existed between moderate and low creative individuals. (ii) High creative adolescents were not different from low and moderate creative individuals in neuroticism. Similar difference was observed between moderate and low creative adolescents. (iii) High creative individuals were not different from low and moderate creative individuals in their anxiety level. (iv) High creative adolescents were significantly higher in body-image barrier characteristics than low and moderate creative individuals. High creative individuals did not differ from low and moderate creative adolescents in their body-image penetration characteristics. Similar differences existed between low and moderate creative individuals. (v) High creative adolescents were significantly higher on theoretical and aesthetic values than low creative adolescents. However, no difference existed between low and moderate creative adolescents with respect to their values. (vi) A creative adolescent was

characterized as an individual who was neither extravert nor introvert and was neither high nor low in neuroticism and anxiety. He was stable in personality organization, and possessed high theoretical and aesthetic values.

528. PATEL, G.N., *Investigation into Anxiety among Secondary School Students of Sabarkantha District*, Ph.D. Edu., SPU, 1979

The major objectives of the study were: (i) to construct and standardize a scale for measuring anxiety of the secondary school students, and (ii) to study the relationship between anxiety and other variables such as sex, area and size of the family.

The first phase of the study dealt with the process of standardization. A printed scale of 162 statements was administered on a representative sample of 615 students for pilot tryout. On the basis of discrimination index, internal consistency and the value of chi-square, 90 items were selected for the final scale. The final scale was administered to 100 students selected at random from each of the Classes VIII, IX and X. The investigator calculated the concurrent and congruent validity. The age norms, area norms, grade norms and percentile norms were established. Letter grades for different score limits were also decided and shown. Thereafter the scale was administered on a representative random sample of 3,630 students of Classes VIII, IX and X to study the relationship between anxiety and demographic variables as well as cultural factors.

The findings were: (i) There was no relationship between age and anxiety. (ii) The girls of Classes VIII, IX and X did not differ significantly with regard to anxiety. (iii) The girls of Class X showed less anxiety than those of Classes VIII and IX. (iv) The boys of Classes VIII and IX had higher mean anxiety score than those of Class X. (v) The anxiety level of the girls was higher than that of the boys. (vi) The urban and rural girls of Class VIII showed no significant difference in the mean anxiety score. (vii) The rural boys of Class VIII had high anxiety level as compared to the anxiety level of the urban boys of Class VIII. Similarly, the rural boys of Class X had high anxiety. The urban and rural Class IX boys showed no significant difference in anxiety. (viii) The students of upper socio-economic status group were less anxious than those of the low socio-economic status group. (ix) The anxiety adversely affected the performance of pupils. (x) The mean anxiety level of the pupils coming from large families was higher than that of the pupils coming from small families.

529. PATEL, J.B., *An Investigation to Study Motives, Concerns and Fear of Failure of Ideationally Conformist and Deviant University Students*, Ph.D. Psy., MSU, 1982

The specific objectives of the investigation were: (i) to develop a tool measuring conformity tendencies among university students, (ii) to study sex differences in ideational conformity among university students, (iii) to relate individual differences in ideational conformity to achievement motive, (iv) to relate individual differences in ideational conformity to affiliation motive, (v) to relate individual differences in ideational conformity to power motive, (vi) to study the concerns of ideationally conformist and deviant university students, and (vii) to relate individual differences in ideational conformity to the fear of failure.

The sample for the study consisted of 687 students including 356 males and 331 females studying in eight different faculties of the M.S. University of Baroda. For the measurement of conformity a situational type test was developed by the investigator. Test-retest reliability of the test was found to be 0.86. The motives of achievement, power, affiliation and the fear of failure were measured using Thematic Apperception Test of McClelland as adapted by Prayag Mehta. Cantrill's Self-Anchoring Striving Scale was used to measure the concerns. The data were analysed by computing quartile deviations, product moment correlations, and t-ratio.

The major findings of the study were: (i) Students belonging to different faculties differed among themselves in respect of ideational conformity. (ii) Girls did not differ significantly from boys in their tendency to conform ideationally. (iii) Conformists and non-conformists did not differ significantly with respect to the need for achievement. (iv) Conformists and non-conformists differed significantly in their need for power and affiliation, and the fear of failure. Non-conformists scored higher on the need for affiliation and the fear of failure. (v) Conformity had significant negative correlation with the need for achievement and the need for power, and had significant positive correlation with the need for affiliation and the fear of failure. (vi) Conformists and non-conformists had similar concerns. They were more concerned about good married life, good jobs and good education.

530. PATEL, S., *Relation of Diet and Growth to Intellectual Growth among School Children in Orissa*, Dept. of Anthropology, Government College,

Phulbani, Orissa, 1983 (NCERT-financed)

The objective of the investigation was to explore the relationship between the physical and intellectual growth and the nutritional status and parental educational level among the top ten students of Classes VIII, IX and X in the district headquarter high schools of Orissa. The hypotheses tested were: (i) Students with normal physical growth will be superior to their counterparts on some cognitive tests. (ii) Students attending public schools (receiving a greater amount of stimulation and representing a higher economic status) will score more on IQ tests than those attending traditional schools. (iii) On the gradation of nutritional anthropometry there is similar gradation/variation on IQ test scores.

The top ten students of Classes VIII, IX and X from three schools of a district — boys', girls' and public — were selected. The students in public schools were taken to be belonging to higher socio-economic group in comparison with those of traditional schools. The houses of these students were visited on three consecutive days to record their food intake. The kitchen balance, standardized cups and spoons were used for the estimation of food intake. Anthropometric measurements comprised stature, weight, chest girth (after inhalation and exhalation), bicristal diameter, biacromial diameter, upper arm girth and skinfold thickness at three sites (triceps, biceps and sub-scapular) were recorded. The Standard Progressive Matrices were also administered.

The findings were: (i) The students from traditional and public schools differed considerably in intelligence. (ii) Nearly 50 per cent traditional school students were underweight as against 33 per cent public school students. (iii) The percentage of the students with normal weight from traditional and public schools was 32 and 43 respectively. (iv) The diet of the students from the higher income group (public schools) was adequate for the maximal growth and needed no supplementation.

**531. PATEL, S.J.,** *Motivational Factors of Achievement, Affiliation and Power as reflected in Gujarati Novels in the Period from Thirties to Seventies of the Present Century*, Ph.D. Edu., MSU, 1979

The major objectives of the investigation were: (i) to enquire into the degree of achievement, affiliation and power motives as reflected in the Gujarati novels of the period from 1930 to 1970, (ii) to find out the relationship between the types of Gujarati novels and the motives as

reflected in the novels, and that between the size of the novels and the motives, (iii) to evaluate the novels on the criteria of the nature and extent of various types of motives reflected therein, and (iv) to study the inter-relationship between the types of motivation reflected in Gujarati novels.

The sample consisted of nineteen novelists who had written maximum number of novels and 10 per cent of their works in each decade between 1930 and 1970. In all, eightyfour novels were included in the sample. The technique developed by McClelland, Atkinson and others was used to measure the achievement motive. The technique developed by Veroff was used to measure the power motive and the technique developed by Atkinson, Veroff and Heyns was used to measure the affiliation motive. Descriptive statistics and correlation technique were used for data analysis.

The major findings were: (i) Gujarati novels had, on an average, one incident reflecting the achievement motive or the affiliation motive or the power motive in every three pages. (ii) The affiliation motive was seen more than the achievement or power motive. (iii) The novels of Gunvantrai Acharya and Dhumketu reflected more of the achievement motive whereas those of K.M. Munshi reflected all types of motives more or less equally. (iv) The degree of achievement motive went on decreasing in the novels published from 1930 to 1970, whereas the degree of affiliation motive gradually increased from 1930 to 1970. (v) Historical novels reflected more of achievement motive whereas social/novels reflected more of affiliation motive. (vi) There was no significant difference in the degree of power motive as reflected in historical and social novels. (vii) The size of the novel was positively related to the degree of achievement motivation but it was not related significantly to the affiliation or power motive. (viii) The author's style and the type of motive had no relationship.

**532. PATEL, S.S.,** *An Investigation into the Role of General Ability of Pre-primary School Children in Relation to Reading Readiness*, Ph.D. Edu., SPU, 1982

The major objectives of the investigation were: (i) to develop a tool to measure the general ability of school-going children in the age group 3 to 6, and (ii) to study the impact of general ability on different components of reading readiness and reading readiness as a whole.

For measuring the reading readiness of the children a

test developed by Umrajwala was used. A non-verbal individual test of general ability was constructed and standardized. It consisted of two parts, viz., information containing thirty items, and reasoning containing twenty-four items. Both the parts were in pictorial form. For establishing norms a representative sample of 2,199 school-going children was selected from Gujarat State, and for studying the relationship between general ability and reading readiness 400 children were purposefully selected from the sample. The reliability coefficients established by ten different methods ranged from 0.87 to 0.97 and the validity indices varied from 0.58 to 0.93 estimated by six different methods. Factorial analysis by Centroid Method revealed that the test had only one common factor.

The major findings of the study were: (i) There were no significant sex differences with regards to general ability among the children of Classes K.G. I, K.G. II and Class I of Gujarat State. (ii) The general ability and reading readiness along with its components were significantly and positively related. (iii) The area variable affected the achievement of children of K.G. I and K.G. II in the total score of reading readiness. The children of urban areas showed higher achievement in the total score of reading readiness. (iv) The general ability was found to influence the achievement of the children of K.G. I and K.G. II in all the components of reading readiness as well as in the overall scores of reading readiness. (v) The sex variable as an independent factor was not found to be an influencing factor in the total achievement of all the components of reading readiness taken together. (vi) There was no interaction effect between IQ and area variables, between IQ, and sex variables, between area and sex variables and among IQ, area and sex variables influencing the achievement of children of K.G. I and K.G. II in every component of reading readiness as well as in the total scores of reading readiness.

**533. PATHAK, R.D.,** *Sociometric Status and Adjustment Level in School Children*, Ph.D. Psy., Sag. U., 1971

The objectives of the study were: (i) to compare populars, neglectees, rejectees and isolates with regard to their adjustments, personality dimensions, and scholastic achievements, (ii) to recognize the relationship between adjustment and sociometric status, (iii) to understand the value of achievement and personality dimensions in adjustment and sociometric status, and (iv) to acquire the overall view of popularity, rejection, iso-

lation, etc., as the function of adjustment and its allied aspects. In all, forty-eight hypotheses were tested relating to differences among populars, neglectees, rejectees and isolates on various dimensions of adjustment, other personality dimensions, and scholastic achievement. One hypothesis on the relationship between socio-economic status and adjustment levels was also tested.

A sociometric questionnaire was administered to 300 boys and 500 girls of Class IX of ten higher secondary schools of Jabalpur and Saugar. The actual study was conducted on 260 students, 130 boys and 130 girls. On the basis of sociometric measurements, 80 students (40 girls and 40 boys) were selected to form a group each of populars, neglectees and rejectees, and 20 students were selected in the group of isolates with 10 boys and 10 girls. Data on other variables were collected through Vyaktitva Parakh Prashnavali incorporating items on home, health, social, emotional and school adjustments, Socio-School Adjustment Inventory (Jai Prakash), teachers' rating scale on personality dimensions and percentage of school marks in two consecutive years. The scores were compared among each subgroup — popular boys and girls (PB and PG), neglectee boys and girls (NB and NG), rejectee boys and girls (RB and RG), and isolate boys and girls (IB and IG) for each component separately. The chi-square and contingency coefficients were used for analysis of data.

The study revealed: (i) The populars were significantly superior to all the other three groups in home adjustment, social adjustment, emotional adjustment and school adjustment, and in health adjustment they were superior to the neglectees and the isolates but not to the rejectees. (ii) The neglectees were similar to the rejectees and the isolates in home adjustment, social adjustment, emotional adjustment and school adjustment but they were inferior in health adjustment. (iii) The rejectees and the isolates were comparable in home adjustment, social adjustment, emotional adjustment and school adjustment but they differed in health adjustment. (iv) The populars were superior to all the other three groups on socio-school situations, personality dimensions, scholastic achievement and adjustment grades. (v) The neglectees were superior to the rejectees and the isolates on socio-school adjustment and to the rejectees on scholastic achievement but they were comparable on personality dimensions, and scholastic achievement of the isolates. (vi) The rejectees and the isolates were similar in socio-school adjustment, and inferior to the isolates in scholastic achievement and personality dimensions. (vii) Sociometric status was significantly related to the various grades of adjustment.



534. PHATAK, A.P., *Disabled Children in Normal Schools*, Vidhya Bhavan G.S. Teacher's College, Udaipur, 1983 (NCERT-financed)

The objectives of the investigation were to study: (i) the personality traits of orthopaedically disabled children studying in normal schools, (ii) the adjustment pattern of disabled children, (iii) the aspirations of disabled children, (iv) the sociometry of orthopaedically disabled children in normal schools, and (v) the ways to achieve better integration with normal children.

The sample was drawn from among the orthopaedically disabled children in normal schools of three districts of Rajasthan, namely, Udaipur, Banswara and Jodhpur. The final sample consisted of seventy-nine boys of thirty-two secondary and higher secondary schools of which nine schools were from the rural area. The age varied from 12 to 18 years; most of the children were in the age range 14 to 17. The tools used were the High School Personality Questionnaire (Kapoor and Mehrotra), Adjustment Inventory (Sinha and Singh) as well as an aspiration questionnaire and personal data blank prepared for the purpose.

The study revealed: (i) About 40 per cent of the disabled children had illiterate fathers. Sixty-three of the seventy-nine children's fathers had studied only up to higher secondary or below. (ii) Forty-six children had a family income below five hundred rupees. (iii) Most of the children were from large sized families having four to five children. (iv) The children were slightly reserved, emotionally stable, satisfactorily adjusted but were low in scholastic mental capacity, and were demanding and easily excitable, obedient, expedient, vigorous, not very tense and were with the group. (v) Overall adjustment was average, emotional adjustment was good while social and educational adjustment was average. (vi) Sociometric status was satisfactory; 41.6 per cent were above the sixtieth percentile and 22.2 per cent above the ninetieth percentile; only three children were isolates. (vii) Most of them wanted to continue studies up to post-graduation. (viii) Teaching was the most preferred vocation and the army, the police and athletics the least; the religious way of life was the most preferred one while intellectual or political pursuits and material comforts the least preferred. (ix) The majority felt that they had not faced any serious problem; the type of problems faced were the fear of the school, difficulty with classroom teaching, dissatisfaction with teachers, ridicule by other children and participation in cocurricular activities.

535. PILLAI, K.S., *Sex Difference in Certain Personal-*

*ity and Aptitudinal Dimensions Related to Science Achievement*, Ph.D. Edu., Calicut U., 1981

The objectives of the study were: (i) to find out whether there was significant difference in the mean scores in each of the dependent variables when two unselected samples of boys and girls were compared, (ii) to find out whether there was significant difference in the mean scores of boys and girls in each of the dependent variables when two equated groups of boys and girls were compared, where the equated groups were obtained by controlling the following variables in the order of (a) intelligence, (b) intelligence and place of residence, (c) intelligence, place of residence and age, and (d) intelligence, place of residence, age, and socio-economic status, (iii) to find out whether there was significant difference in the mean scores of boys and girls in each of the dependent variables, where the two sex groups were obtained from nearly homogeneous levels of science achievement (high, average, and low), (iv) to find out whether there was significant difference in the mean scores of boys and girls in each of the dependent variables, where the two sex groups were obtained from nearly homogeneous levels of intelligence (high, average and low), (v) to estimate the relation between each of the dependent variables and science achievement (total) separately for boys and girls, (vi) to estimate the relation between each of the dependent variables and achievement in the component areas of science — physics, chemistry and biology — separately for boys and girls, and (vii) to test whether the equivalent correlations obtained for the two sex groups differed significantly. The personality variables under study were interest in science, attitude towards science and attitude towards problem-solving, and the aptitudinal variables were number series, science information, formulation, spatial ability, verbal comprehension and interpretation, and science aptitude. The two control variables were intelligence and science achievement.

The sample consisted of 888 pupils of Standard IX drawn through the proportionate stratified sampling technique. The Kerala University Science Interest Inventory, the Kerala Science Aptitude Test, Raven's Progressive Matrices and three tools, viz., scale of attitude towards science, scale of attitude towards problem-solving, and achievement test in science, standardized by the investigator, were used for collecting data. Correlation and t-test were used to analyse the data.

Some of the major findings of the study were: (i) Significant sex differences were found in science aptitude, science information, number series, verbal comprehension

and interpretation, spatial ability, interest in science, and formulation. (ii) When the role of intelligence, place of residence, age, and socio-economic status were controlled one by one, there were found significant sex differences in science information, science aptitude, verbal comprehension and interpretation, interest in science, number series, and spatial ability. (iii) Among high achievers in science significant sex difference were found in verbal comprehension and interpretation, science aptitude, spatial ability, and number\* series. Among average achievers in science, significant sex differences were found in all variables except attitude towards science. Among low achievers in science, significant sex differences were found in science information, science aptitude, and verbal comprehension and interpretation. (iv) In the high intelligence group, sex differences were found in spatial ability. In the average intelligence group, sex differences were found in all variables except attitude towards science and formulation. In the low intelligence group, sex differences were found in science aptitude, number series, verbal comprehension and interpretation, interest in science and spatial ability. (v) Total science achievement and all the nine select variables were found to be significantly correlated for both boys and girls. (vi) The relationship between the select variables and achievement in physics, chemistry and biology, taken separately, was found to be significant for both boys and girls.

**536. PRAKASH, P.,** *Need Achievement of Adolescents and Their Relationship with Parents*, Ph.D. Edu., Agra U., 1981

This was a study of the need achievement of adolescent boys at different levels of SES and intelligence and their relationship with parents. It was conducted on a sample of 816 school-going urban adolescent boys in the age group 15 classified into different levels of SES, upper middle (N = 224), lower middle (N = 386), upper lower (N = 206), and on the basis of intelligence, superior (N = 60), above average (N = 109), average (N = 386), below average (N = 261). The classification for SES was done on the basis of the scores obtained as per Socio-economic Status Scale Questionnaire (Kapoor) and for intelligence on the basis of the scores obtained in the Culture Fair Intelligence Test (Cattell and Cattell). The other tools used in the study were Parivarik Sambandh Suchi (Sherry and Sinha) and Achievement Motivation Test (Mehta). Parent-child relationship were expressed in the form of mother-acceptance, concentra-

tion and avoidance; father-acceptance, concentration and avoidance; and parental acceptance, concentration and avoidance. The data were used to assess the relationship between the need-achievement and each aspect of parent-child relationship at different levels of SES and intelligence. The data were also used to show the difference in correlation (need-achievement and parental attitude) in any combination of two levels of SES and intelligence.

The study revealed: (i) There existed no relationship between the need achievement and the acceptance and concentration aspect of parent-child relationship. There was a significant low negative correlation between the n-Ach of adolescents and the avoidance aspects of parent-child relationship. (ii) The n-Ach scores seemed to be alike for upper middle and lower middle groups of SES whereas significant differences existed between the n-Ach of upper middle and upper lower strata. (iii) The adolescent boys of upper middle stratum were more accepted by their fathers than the boys of upper lower and lower middle strata; for the rest there existed no significant difference regarding the father-acceptance. (iv) No significant differences were found between the adolescent boys (UM and UL groups) regarding their feeling of concentration while the reverse was true for UM and LM strata and also for LM and UL strata. (v) With regard to the avoidance aspect of PCR, lower middle and upper middle strata did not seem to differ significantly but the reverse was true regarding the upper middle and upper lower strata. (vi) Very low but statistically significant correlations (negative and positive) between the need achievement and each aspect of parental attitude at different levels of SES excepting father-acceptance at lower middle stratum and mother and parental avoidance at upper lower stratum. There was no correlation between the n-Ach and each aspect of parental attitude between upper middle and upper lower strata; father-avoidance was an exception to this. (vii) Regarding intelligence levels of different groups, it was found that there existed no difference as far as n-Ach was concerned with the superior level. For below average group significant differences existed between average, above average and superior groups in n-Ach. Superiors differed significantly from above average, average and below average groups in parental-acceptance while the boys of other categories did not differ in parental-acceptance among themselves. (viii) Regarding mother concentration, there existed no significant difference regarding this aspect of parental attitude in all categories of adolescents. Regarding father-avoidance there was no significant difference in the groups excepting below

average boys who differed significantly from their counterparts; the same was true about parental avoidance. Significant positive relationship existed between the n-Ach and parental acceptance in the case of average boys while avoidance was negatively related with n-Ach in the case of below average group. Other aspects of parental attitude were not significantly related with n-Ach. There was no correlation between the n-Ach and each aspect of parental attitudes between groups excepting superior and above average, and superior and below average regarding mother-acceptance and parental-acceptance. (ix) Significant positive relationship was found between the n-Ach and each of the predictor variables, i.e., SES and intelligence.

**537. PRASAD, A.,** *Fatigue of School Children*, Ph.D. Psy., Kan. U., 1965

The objectives of the investigation were: (i) to find out the general trends of student's fatiguability as a result of the whole-day schooling, (ii) to find out the relationship between the age of children and their fatigue, (iii) to study the sex differences in fatigue, and (iv) to study the relationship of fatigue with personality, adjustment, intelligence and achievement of students.

The sample comprised 989 students of Classes IX and XI. The age ranged from eleven to twenty-one years. To measure fatigue, personality, adjustment, verbal intelligence and non-verbal intelligence, the parallel letter-cancellation tests developed by the investigator Vyaktitwa Parakh Prashnavali, Group Test of Mental Ability (Jalota), Standard Progressive Matrices, respectively, were used. Home examination marks were the indicator of achievement. The correlations were computed from the collected data.

The findings were: (i) The majority of the students suffered minor degree of fatigue. (ii) There was a negative and significant relationship between the tendency of fatigue and scholastic attainment. (iii) Age and sex differences in fatigue revealed that the Class XI boys were more liable to fatiguability than others. (iv) The least fatigued students had well adjusted personality, emotion, health, society, home and school and did well in school subjects. (v) Verbal intelligence and fatigue were closely related while non-verbal intelligence and fatigue were not.

**538. PRASAD, S.D. and GOTHWAL, U.,** *Job Awareness as Related to Anxiety and Insecurity*, Dept. of

Psy., Raj. U., 1980 (Raj. U-financed)

The study attempted to examine the influence of personality factors such as anxiety and insecurity on job awareness and occupational choice. The hypotheses tested were: (i) High anxiety would lead to greater job awareness and vice versa. (ii) High insecurity feeling would lead to lesser job awareness and vice versa. (iii) Male subjects would have greater job awareness than their female counterparts.

Fifty-six male and thirty-four female students from Standards X and XI were selected on availability basis as sample. Their age ranged from 14 to 20 years. The tools used were Sinha's Manifest Anxiety Scale and a checklist for occupational choices. The study was conducted in two sessions with an interval of four days. In the first session, after giving proper instructions, Sinha's Manifest Anxiety Scale and the checklist for occupational choices were administered. In the second session the checklist for awareness of occupational choices and the list of their respective functions were administered. Mean, median, t-test and product moment correlation were used to analyse the data.

The findings of the study were: (i) Job-awareness was positively correlated with anxiety ( $r = 0.218$  which was significant at 0.05 level). (ii) There was a significant negative relationship ( $r = -0.243$ ) between job-awareness and security-insecurity. (iii) There was no significant difference between males and females regarding job-awareness. (iv) Preference for professional and technical areas was greater among girls than among boys. In the occupational area, administrative and executive jobs were chosen as second preference by both boys and girls. Boys as compared to girls had greater desire to be administrative officers, executive officers and village level workers. In the area of sports and recreation, girls showed more preference than boys. (v) Both boys and girls gave their first preference for professional and technical area, second preference for administrative and executive jobs, and third preference for sports and recreation.

**539. PURSWANI, P.,** *The Effects of Cue Explication on Adolescents differing in Locus of Central Expectancies*, Ph.D. Psy., Luc. U., 1982

The objective of the study was to investigate the interactive effects of the locus of control, cue conditions and sex of the subject on a level of aspiration task.

The initial sample consisted of 350 boys and girls of 13

to 15 years of age. The Hindi translation of Nowicki-Strickland's Locus of Control Scale was administered to them. On the basis of  $Q_1$  and  $Q_3$  internal and external subjects were identified. There were 88 internals (46 boys and 42 girls) and 86 externals (44 boys and 42 girls). For the purpose of the study, Rotter-Jenson's Group Level of Aspiration Task was employed as a dependent measure for the experimental manipulation. This was an experimental study which employed  $2 \times 2 \times 2$  factorial design. The analysis of variance, critical ratio and chi-square were employed for analysing the data.

The findings were: (i) The internals in comparison to the externals showed fewer shifts and a greater incidence of internal control-related behaviour. The internals as compared to the externals felt less of imitation. They were also motivated more than the externals while working on the task. (ii) The subjects in the cue condition were more motivated and felt more in control over success and failure on the task than the subjects in the low cue condition. (iii) The boys in comparison to the girls rated themselves as more motivated during the performance of the task. (iv) In the low cue condition, the internals outperformed the externals by way of showing fewer shifts. Also, they were more motivated than the external ones. However, in the high cue condition the performance and the motivational levels of the externals were raised to those of the internals. (v) The boys and the girls were found to be differently affected by cue explication. In the low cue condition, no significant difference was found between the boys and the girls in the incidence of pattern 1 or 3. However, in the high cue condition, a greater incidence of pattern 1 or 3 was seen in the boys than in the girls. (vi) The external boys performed the task like internal boys in both the cue conditions. But the external girls showed less incidence of pattern 1 or 3 than the internal girls in both the cue conditions. (vii) The internal boys and girls did not differ in the incidence of pattern 1 or 3 either in the low or high cue conditions. Between the cue conditions, the internal boys as well as the internal girls were consistent in the incidence of pattern 1 or 3. (viii) In the low cue condition, the incidence of pattern 1 or 3 was more or less the same for the external boys and girls. However, in the high cue condition, more of the external boys exhibited pattern 1 or 3 than the external girls. (ix) The provision of explicit instructions improved the performance of the external boys only. The external girls could not benefit by the available cues. (x) In the low cue condition, the performance of the externals was inferior to that of the internals. (xi) The cue explication was found to be an economical technique of inducing internal-control-re-

lated behaviour in children. The implication for parents and teachers is to employ appropriate and sufficient cues while training their wards.

540. QURESHI, A.N., *A Study of Creativity in Relation to Intelligence, Manifest Anxiety and Level of Aspiration of High School Girls*, Ph.D. Psy., Agra U., 1980

The study was undertaken to know (i) how and at what level of intelligence, anxiety and the level of aspiration are related to creativity, (ii) how much and in what way intelligence, anxiety and the level of aspiration influenced creativity when the variables were varied systematically (intelligence three levels, anxiety two levels and level of aspiration two levels), and (iii) the dynamics of creativity as related to intelligence, anxiety and the level of aspiration.

The investigation was based on a multi-group *ex post facto* research ( $3 \times 2 \times 2$ ) factorial design. Statistical techniques involving analysis of variance and coefficient of correlation were used. The sample was drawn from Firozabad town. Three hundred girls of high school and intermediate classes were selected and twenty-five cases for each cell were chosen by random sampling. The standardized tools used were the Test of Creativity (Mehdi), Group Test of Mental Ability (Jalota), STAT (Hindi adaptation by Sharma and Singh) and Level of Aspiration Inventory (Patel).

The main findings were: (i) Intelligence, manifest anxiety and aspiration indicated influence on creativity and its components—fluency, flexibility, originality—differently; intelligence appeared to be significantly and positively correlated to creativity. (ii) Anxiety appeared to be a positive correlate of creativity. (iii) Aspirations were related to creativity and its components. It correlated well with originality and creativity as a whole; however, it was not correlated with both fluency and flexibility. (iv) Intelligence, anxiety and aspiration promoted creativity and its components, unilaterally and independently. They did not associate together in moulding the trends of creativity.

541. RAI, G.C., *The Effects of Differential Pre-training and Presentation Methods on Concept Formation*, Ph.D. Psy., BHU, 1968

This was an experimental study dealing with three parameters of concept formation, namely, the process

by which concepts are formed, the effects of differential prior training on concept formation and the efficiencies of the modes of stimulus presentation in the formation of concepts. The investigation aimed at studying the relative effects of pre-training in absolute discrimination, relative discrimination and relative discrimination-cum-generalization on concept formation task with different materials but common mode of response in the two situations. The objective was to study the exclusive role of the commonness of the principle of response in the two situations.

The sample comprised 800 non-Telugu-speaking male subjects of the age group 11+ to 15+ years studying in Class VIII of local higher secondary schools. The study was based on a factorial randomized blocks design  $2 \times 4 \times 2$  with three variables — criteria in conceptual response, conditions of pre-training control, and methods of presentation of stimuli. Analysis of variance and t-test were used for data analysis.

The major findings were: (i) The criterion in conceptual response and the methods of presentation of stimuli produced significant main effects and not the pre-training variable. None of the interactions yielded any significant results. (ii) The groups of subjects who worked with Relational response pack performed significantly better than the corresponding groups of subjects who worked with Identical response pack. (iii) The performance of groups who were presented with the cards simultaneously was significantly better than that of the groups who were presented with the cards successively. (iv) The groups of subjects who were imparted pre-training in relative discrimination-cum-generalization, gave the best performance on the concept formation task. The second rank was assigned to those groups of subjects who were given pre-training in relative discrimination only. They were followed by those subjects who were given pre-training in absolute discrimination.

542. RAI, S., *Problem-solving in Science of Creative and Non-creative Students*, Ph.D. Edu., Pat. U., 1982

The objectives of the study were: (i) to identify creative and non-creative students, (ii) to prepare problem-solving tasks, and (iii) to find out the difference in problem-solving ability between the creative and the non-creative students.

A set of tasks involving problem-solving ability was developed for the purpose. The sample for the study consisted of 200 students from two secondary schools of

Patna. In order to identify creative and non-creative students, the Creativity Test of Mehdi was used. The two groups of creative and non-creative students were tested on problem-solving tasks. In order to avoid experimental errors all the students were subjected to task performance in the same conditions.

The main findings of the study was that the creative and the non-creative groups differed significantly in their problem-solving ability. There was thus need for assigning more tasks to the creative students after they were identified. The assignment of problem-solving task in science should be in accordance with the degree of creativity. Further, the finding was of much use to curriculum planners and science teachers in the sense that the same problem or the same set of problems in science could not work gainfully with all the students in the classroom.

543. RAJ, H.S.S., *The Overlap of Creativity with Certain Cognitive and Affective Variables*, Ph.D. Edu., Ker. U., 1978

The objectives of the study were: (i) to examine the dependence of one variable category on others, (ii) to find out the correlation coefficients between all possible pairs of the twenty experimental variables and understand the dependence (or independence) of the three major dimensions (viz., creativity, cognitive and affective dimensions), and (iii) to factor analyse the correlation matrix and interpret the resulting factors.

The study was based on a representative sample of 610 secondary school pupils in Kerala selected by the proportionate stratified sampling technique. Fourteen standardized tools were used to collect data.

The major findings were: (i) All the cognitive variables and creativity variables discriminated between the high and the low creative students, whereas among the seven affective variables attitude towards academic work and masculinity-femininity failed to discriminate between them. (ii) All the creativity variables and the cognitive variables discriminated between the students of high intelligence and of low intelligence whereas among the seven affective variables general anxiety and masculinity-femininity failed to discriminate between the two groups. (iii) All the variables except spatial ability II under cognitive variables and introversion-extraversion, masculinity-femininity and general anxiety under affective variables discriminated between the high and the low adjustment groups of students. (iv) A vast majority of the coefficients of correlations obtained bet-

ween any of the creativity variables with different cognitive and affective variables were statistically significant indicating that creativity could not be thought of as independent of the cognitive and affective dimensions. (v) The factor structure of the twenty variables yielded six significant factors, namely, Intellectual Creativity, Adjustive Divergence, General Adjustment, Perceptual Ability, Performance Anxiety and Reasoning Facility. The first factor was the most dominant (accounted for almost 53.9 per cent of the variance) showing the interaction of creativity with both the cognitive and the affective variables.

544. RAJEEVA, M., *A Study of Achievement Motive, Its Correlates and Performance of IX Grade Pupils of Secondary Schools of Bangalore*, Ph.D. Edu., MSU, 1982

The objectives of the study were to find out: (i) the difference between the classroom trust scores of high and low achievement motivated students, (ii) the difference between the perception scores of high and low achievement motivated students, (iii) the difference between the anxiety scores of high and low achievement motivated students, and (iv) the difference between the achievement scores of high and low achievement motivated students.

School pupils studying in different classes of Grade IX in the city of Bangalore formed the population of the study. Twenty-two classes were selected randomly from city schools. Data were collected by using the adapted TAT, classroom trust and perception tool, anxiety test, adjustment test, and a teacher-made test of achievement. The collected data were analysed by using t-test.

The findings of the study were: (i) There was significant difference between classroom trust scores of high and low achievement motivated students. (ii) There was significant difference between the perception scores of high and low achievement motivated students. (iii) There was significant difference between the anxiety scores of high and low achievement motivated students. (iv) There was significant difference between the achievement scores of high and low achievement motivated students.

545. RAM, A.L., *A Study of Cognitive Complexity among College Students as a Function of Their Personality Factors*, Ph.D. Psy., Agra U., 1981

The study aimed at investigating the relationship bet-

ween cognitive complexity among the college students in five colleges affiliated to Agra University and certain background, personality factors and cognitive style.

Three major instruments were used in the study. To measure cognitive complexity Kelly's Role Construct Reportary Test was used. To measure personality factors the 16 PF Questionnaire, Form A (Hindi adaptation by Kapoor) was used. The sample of the investigation was 480 Agra University students enrolled in undergraduate and postgraduate classes. Out of these, 354 were males and 126 were females. The age range was 17 years to 26 years with the mean age of 22.5 years. After the pilot study, questionnaires and inventories were selected on the basis of feasibility of use in the final study. On the basis of median scores two groups were formed, namely, the high cognitive complexity (HCC) group and the low cognitive complexity (LCC) group. Correlation coefficients, chi-square test, t-test, analysis of variance, etc., were used to verify the hypotheses.

The major conclusions were: (i) Cognitive complexity was significantly related to and affected by some background variables like sex, discipline and college, cognitive style and various personality factors. (ii) There were differences in intercorrelation patterns between personality traits and cognitive complexity and cognitive style measures of the male and the female students in various disciplines. (iii) Inter-correlation pattern for the sampled respondents between eight background variables and cognitive complexity measures was different. Sex and discipline had significant positive correlation with cognitive complexity. (iv) The females had more cognitive complexity than the males. (v) The discipline of the respondents was a significant correlate of cognitive complexity. There were differences in the cognitive complexity levels among five different disciplines of students. The respondents of science and home science had more cognitive complex structure than those of the arts, agriculture and commerce. (vi) Among cognitive style categories of students, conceptual dominance and weak automatization type of cognitive style had significant positive correlation with cognitive complexity. The students with conceptual dominance and weak automatization groups of cognitive style were having more cognitively complex structure. (vii) Among sixteen different personality traits, shy vs. venturesome had a significant negative relationship with perceptual motor dominance and strong automatization category of cognitive styles. They had weaker super-ego strength. (viii) Group dependent vs. self-sufficient had a significant positive relationship with cognitive complexity. The remaining personality factors had no significant relationship with

cognitive complexity. (ix) There was significant difference between the cognitive complexity and cognitive style patterns of the male and the female students. (x) Students of different faculties had different types of cognitive styles; the arts, commerce, science discipline students had cognitive style of perceptual motor dominance type. Agriculture students had conceptual dominance cognitive style. (xi) There were significant differences between cognitive complexity and cognitive styles of different discipline students. The arts students significantly differed in relation to perceptual motor dominance vs. conceptual dominance and strong and weak automatization type of cognitive style from the students of other disciplines. (xii) There seemed to be significant difference between the levels of cognitive complexity (high and low) and personality traits of reserved vs outgoing, sober vs happy-go-lucky, group dependent vs self-sufficient and relaxed vs tense. (xiii) The high cognitive complexity (HCC) and the low cognitive complexity (LCC) groups of female respondents were significantly different on the levels of cognitive complexity and personality factors, emotionally less stable vs emotionally stable, shy vs venturesome, forthright vs shrewd and conservative vs experimenting. (xiv) The mean differences between the scores of sixteen personality tests for factors reserved vs outgoing, expedient vs conscientious, conservative vs experimenting and undisciplined vs controlled of the male and the female respondents were significant. The remaining factors were not significant. (xv) Out of sixteen personality factors, eight, namely, reserved vs outgoing, less intelligent vs more intelligent, expedient vs conscientious, practical vs imaginative, placid vs apprehensive, conservative vs experimenting and relaxed vs tense, differed significantly with reference to the disciplines of the respondents. The remaining eight personality factors did not differ significantly. (xvi) Significant relationship between the college and the cognitive complexity level of the respondents was found. The college of the student was a significant correlate of cognitive complexity. (xvii) The age of the students did not affect the cognitive complexity. (xviii) No difference existed between the undergraduates and the postgraduate students with regard to the high and low level of cognitive complexity. (xix) Urban and rural background and caste had no effect on the cognitive complexity of the students.

**546. RAMKUMAR, V.,** *Subject Characteristics of Adolescent Girls with Acute Self-concept*, Dept. of Edu., Ker. U., 1979

The investigation aimed at studying the characteristics of adolescent girls with acute self-concept and comparing them with those of the normal group. The characteristics studied were the area of residence, community, the size of family, socio-economic status, the size of peer group, intelligence, personal adjustment, social adjustment, withdrawing tendency and values.

The tools used were Nafde's Non-Verbal Test of Intelligence, Kerala University Personality Scale, Kerala University Value Inventory of Zacariah, Ramkumar Q-Sort Set for measuring self-concept and a questionnaire. The sample comprised 1,016 college girls between the ages fifteen and eighteen from which 154 girls with extreme self-concept were identified.

The major findings were: (i) The community of students was found to be an important contributory factor for acute self-concept. (ii) The area of residence and the size of the family did not contribute to acute self-concept. (iii) The extreme group showed lower intelligence scores than the normal group. (iv) Personal and social adjustment scores of the extreme group were significantly lower than those of the normal group. Similarly, the mean withdrawing tendency score of the extreme group was lower than that of the normal group. (v) The extreme group had significantly higher mean scores than the normal group on four value areas — religious, political, aesthetic and theoretical. The extreme group had significantly lower scores in social values and exhibited no difference in economic values. (vi) A very high percentage of the backward community girls was found to have acute self-concept.

**547. RANI, A.,** *Psychological Study of Musically Gifted Girls at School and College Level*, Ph.D. Edu., Jammu U., 1979

The main objectives of the study were: (i) to find out whether musically gifted girls differed significantly from the non-gifted girls on the personality patterns, (ii) to find out creativity in musically gifted and non-gifted girls both at the school and the college levels, and (iii) to investigate the pattern of adjustment in musically gifted and non-gifted girls at the school and the college levels. Various measuring devices were administered to 500 students of the school and 500 of the college levels selected randomly.

The main findings were: (i) The musically gifted girls, both at the school and the college levels, tended to be more reserved, cool, critical, sceptical and aloof. (ii) The musically gifted girls tended to be quick in grasping

ideas, fast learners and intelligent. (iii) The musically gifted girls were emotionally less stable. (iv) The musically gifted girls both at the school and the college levels were more intelligent than the non-gifted girls. (v) The musically non-gifted girls were emotionally adjusted. (vi) The non-gifted girls were socially better adjusted than the gifted girls.

**548.** RANI, M., *Moral Development in Children*, Ph.D. Psy., All. U., 1968

The objectives of the investigation were: (i) to study the pattern of morality among children, and (ii) to analyse the developmental trends and some of the influences operating on the process.

The sample consisted of 350 children ranging from 6 to 11 years. The number of boys and girls was kept equal in the sample and they were separately divided into three age groups of 6 to 7 years, 8 to 9 years and 10 to 11 years. Half of the students belonged to Anglo-vernacular schools and the other half to missionary schools. Coloured Progressive Matrices, moral insight test and personal data form developed by the investigator were used for collecting data. Central tendency, measures of dispersion, correlation, etc., were used for analysing the data.

The findings were: (i) Age was found to be an important variable influencing the knowledge of moral values. Knowledge of different moral values seemed to increase with an increase in age. (ii) The knowledge of various moral values did not seem to vary much in the two sexes. (iii) Children who did not get any moral instruction in school were in no way inferior in such knowledge to those receiving such instruction in school. (iv) A very similar pattern of moral values was found in the children of all the three age groups; negative value was comparatively more dominant in them. (v) Only at the age of ten to eleven years, boys and girls showed considerable variation in their pattern of different values. At the earlier ages, the differences were found to be quite negligible. (vi) Children receiving moral instruction in school showed a similar pattern of different values to that of those not receiving such instruction. (vii) The mental ability of children did not considerably influence their knowledge of moral values, but its influence showed an increasing tendency with the maturity of the children. (viii) Respect was the most frequent moral value practised by most children in their everyday behaviour; closely associated with it were forgiveness and *punya* (good deeds). Betrayal of faith, greed, anger and false-

hood were some of the negative values which were quite frequent in their behaviour. (ix) Children, in the beginning, were quite immature and showed a clear emotional reaction for the different moral values but as they grew older, they showed maturity. Truth, purity, *punya* and respect were some of the positive moral values which received approval by most of the children. Greed was considered to be a shameful behaviour by them. Betrayal of faith gave them a feeling of guilt. Children generally showed a fearful reaction for most of the negative values. (x) Parent's influence in the acquisition and development of moral values in children was of vital significance; other important sources for such knowledge were teachers and books. (xi) The religious influence of the family did not contribute much to the acquisition of knowledge of moral values in children.

**549.** RAO, N., *A Study of the Socio-psychological Correlates of Social Development of High School Children in Grades VIII, IX and X in Some High Schools of Bangalore City*, Ph.D. Edu., Ban. U., 1978

The study tested the following hypotheses: There is no significant relationship (i) between sex and social maturity of children, (ii) between social class and social maturity of children, (iii) between ordinal position and social maturity of children, (iv) between social maturity and intelligence, (v) between social maturity and self-esteem, (vi) between children's perception of parental behaviour and social maturity, (vii) between the sex composition in the school and the child's social maturity, and (viii) between the type of management of the school and the child's social maturity.

A total of 1,020 students from Grades VIII, IX and X, distributed equally over grades and sexes, selected from fifty secondary schools of Bangalore City on a stratified random basis formed the sample for the study. The R.S.S.B. General Mental Ability Test, the Coopersmith Self-Esteem Inventory, Parent-child Relationship Questionnaire, the modified version of Socio-Economic Status Scale (Kuppuswamy) and the social maturity scale developed for the study were used for the collection of data. Product moment coefficients of correlation and multivariate analysis were used in the analysis of the data.

The following were the major findings of the study: (i) There was significant positive relationship between social maturity and intelligence. (ii) Social maturity showed a positive and significant relationship with self-



esteem. (iii) Social maturity of children positively correlated with six of the ten parental behaviours, namely, protecting, loving, casual, symbolic-love-reward, direct-object-rewarding and symbolic-love-punishment. It was negatively correlated with the other four parental behaviours, namely, rejecting, demanding, neglecting and direct-object-punishment. (iv) The first-borns were lower in maturity than the later-born children and the effect of birth order on social maturity was greater on older children than on younger children. (v) Girls generally scored higher than boys on social maturity. (vi) There were class differences in social maturity among the children of lower grades. (vii) The children from private schools scored more on social maturity than the children from government/corporation schools.

**550.** RAO, T.V. and VIJAYASREE, T., *Psycho-social Maturity and Motivational Profiles of Management Students*, IIM, Ahmedabad, 1976

The study was undertaken to assess the motivational patterns and psycho-social maturity of management students. Other dimensions of their motivation and personality were also studied with the help of several other psychological tests.

The level of psycho-social development was measured using the Stewart Maturity Scale adapted to Indian conditions by T.V. Rao. The scale measured the variable through TAT stories and other verbal imagery. Stern's Activities Index was used to measure the expressed needs through verbal statements of interest by the respondents. Other tools used in the study included an adapted version of Rotter's Locus of Control Inventory, the Interpersonal Trust Scale developed by Rotter, an inventory on Intolerance for Ambiguity, a Profile of Non-Verbal Sensitivity developed by Rosenthal and his team, and Pareek's adaptation of Grossman's Employee Rating Scale for measuring Positive Orientation to People. The TAT stories written by the respondents were analysed to measure the extent to which the achievement, affiliation and power motives were present. The examination marks obtained in one of the subjects were taken to represent achievement. The main sample for the study consisted of 105 students of the postgraduate programme at IIM, Ahmedabad. Data were also collected from a group of thirty senior managers from different parts of the country, a group of forty-nine medical mission sisters, ten medical officers in-charge of primary health centres in Uttar Pradesh, fifteen sales managers from Air India, thirty entrepreneurs

under training and eleven top managers of a large company. Coefficients of correlation, means, standard deviation, t-ratios and chi-squares were used to analyse the data.

The findings of the study were: (i) High order inter-correlations were found between the thirty need variables of the activities index. The rest of the variables seemed to share very little in common with the need variables of the activities index. (ii) The locus of control correlated positively with the need for supplication and harm avoidance and negatively with humanities and social sciences. High internal locus of control was associated with high interpersonal trust. External locus of control was likely to go with high intolerance for ambiguity. People with internal locus tended to have more positive orientation for others. High n-Ach and low n-Aff seemed to go with internal locus of control. Power scores had no relationships. (iii) The interpersonal trust scores correlated positively (although low) with conjunctivity, counteraction, deference, ego-achievement, energy, fantasied achievement, interest in humanities and social sciences, nurturance, practicalness, reflectiveness, sensuality and understanding. Interpersonal trust was also positively correlated with tolerance for ambiguity and need achievement, and had low correlation with employee rating scale and zero correlation with need affiliation. (iv) Intolerance for ambiguity was positively related to fantasied achievement, harm avoidance, narcissism, order, play, sex and supplication. It was negatively related to objectivity and understanding, and also with examination marks. (v) Non-verbal sensitivity was positively related to affiliation, deference, interest in humanities and social sciences, nurturance, reflectiveness, interest in science and sensuality. It was also positively related to examination marks. (vi) Among the different groups, students with engineering and technology background showed difference on many variables. Technology students showed less tendencies to accept their inadequacies and less achievement orientations than others. (vii) Those who had a year's experience indicated higher abasement than the freshers. Those with four or more years of experience had higher abasement scores than those with less experience. Similar tendency was seen in their adaptability and affiliation scores. (viii) None of the respondents had authority relations as a dominant content area. Those depicting relations with objects had more achievement-oriented interests, ego-achievement and understanding and better examination marks than those depicting feelings dominantly. However, they scored low on emotionality and objectivity. Those depicting orientation to actions had

higher scores on objectivity and n-achievement than those depicting relationships with objects and feelings, respectively. (ix) Several respondents did not depict any authority at all, and, among others, most of them depicted authority as being opposed, followed by a benevolent authority. (x) Most of the respondents depicting relation to objects had differentiation as dominant pattern followed by lack of gratification. Very few depicted flight and only two depicted immediate gratification. (xi) In the content area of feelings, the majority of the respondents depicted loss and despair as the dominant pattern. A few depicted incompetence and hostility as the dominant pattern. (xii) With respect to action orientation, a great majority depicted work and a few depicted passivity as the dominant action pattern. (xiii) Over all maturity was positively related to a few variables under study. Comparatively higher positive correlations were found with need for power, emotionality, impulsiveness, exhibitionism, n-Aff, abasement and n-Ach. (xiv) The mean maturity scores of all the groups appeared to be very similar with scores ranging from 2.30 to 3.12. Entrepreneurs showed the highest level of maturity and the first year management students the lowest. However, considerable variations across the groups could be found regarding the scores on, n-Ach, n-Aff and n-Power. (xv) A good number of the senior managers depicting authority relations depicted the authority as being opposed. The medical officers showed a tendency to depict the authority relations as benevolent. In most of the groups the authority relations had not been depicted at all by a large section of the sample. The senior management students found it benevolent while for the first year students it was either opposed or benevolent. (xvi) With respect to object relations, differentiation was depicted by most of the groups dominantly. This was the dominant depiction of medical officers, Air India personnel, entrepreneurs and management students. The medical mission sisters ranged over all the four categories although differentiation was the dominant category. The top management of the large company depicted lack of the gratification as the dominant object relation followed by differentiation. (xvii) Complexity of feelings was depicted dominantly in the top management group only. Feelings of loss was depicted by a high percentage in all other sample groups. (xviii) With respect to work orientations, a high percentage from the entrepreneurs group and the senior management group depicted work dominantly as compared to other groups; the first year management students did not appear to be so much work-oriented in their fantasies.

551. RATH, R. and PATNAIK, N., *Effect of Training on Some Cognitive Abilities*, Dept. of Psy., Utkal U., 1979

The major aim of the inquiry was to assess the effect of training on the improvement of some cognitive test scores in the advantaged and the disadvantaged children. The hypotheses formulated were: (i) In respect of Progressive Matrices and Verbal Reasoning tests, mere familiarity of test in the shape of second repetition of the test would bring about some improvement, though maximum improvement would take place after specific training was given in understanding the principles involved in both the tests. (ii) Greater dosage of incentives given to the subjects might improve their scores. (iii) There would be improvement due to training in both the advantaged and the disadvantaged subjects, but the latter might have greater improvement than the former. (iv) In tests of conservation of volume and length, training would bring about marked improvement at any age.

The sample consisted of two groups of primary school children belonging to advantaged and disadvantaged families, classified on the basis of family education, economic status and caste. All children belonged to schools in a rural area in the age group of eight to nine years. Each group had forty-five children. Each group was further divided into three experimental groups. Selection was done on the principle of randomization. The t-test and the chi-square test were used for statistical treatment of data. Raven's Standard Progressive Matrices (RPM), a test of Verbal Reasoning (VR) developed in the department of psychology of the Utkal University and Piaget's tests of conservation of volume and length were used as research tools. The treatments experimented upon were incentives and incentives combined with training.

The main findings were: (i) There was improvement in scores on RPM as a result of incentives and incentives combined with training in the case of advantaged and disadvantaged groups. (ii) In the case of the groups which received training, improvement was pronounced. (iii) The advantaged and the disadvantaged groups improved their scores on RPM by 4.47 and 6.34, respectively. Due to training, the disadvantaged group improved much more than the advantaged, to such an extent that although the disadvantaged had scored lower than their advantaged counterparts in the pre-treatment test, they reached exactly the same level with the advantaged after training. Thus training helped them much more than mere incentive in improving their scores. (iv) In respect of scores on VR all the groups improved their

scores in the second testing except the disadvantaged under incentive though the differences were not statistically significant. However, in case of incentive and training, the disadvantaged group made a significant improvement in scores. (v) Training brought greater improvement than mere repetition or incentive though incentive had some positive effect. (vi) As age increased, training had much greater effect both in respect of conservation of volume and length, improvement being greater for volume than for length.

552. REDDY, M.V.S., *A Study of Certain Factors Related to the Development of Conceptual Generalizations (Concept-learning) among Adults*, Ph.D. Psy., SVU, 1980

The major objectives of the study were: (i) to examine how younger and older men performed on concept-learning tasks, (ii) to find out how college educated, school educated and uneducated subjects performed on concept-learning tasks, (iii) to analyse how general ability was related to performance on concept-learning tasks, and (iv) to find out how personality characteristics were related to performance on concept-learning tasks.

The sample consisted of forty younger and forty older adult men — from each of the three levels of education, viz., college, school, and no education. The age of the younger adult subjects ranged between twenty and twenty-five years, while the age of the older adult subjects ranged between forty-five and fifty years. The subjects were administered a general ability test (RPM), a personality test (16 PF) and four concept-learning tasks.

The major findings of the study were: (i) The three education groups differed significantly in the total time taken, number of hypotheses presented, time lapse between the first and the final hypotheses, proportion of correct guesses and the performance index in the case of conjunctive concept I (familiar figures). (ii) In conjunctive concept I (familiar figures), the younger and the older groups did not differ significantly (when general ability was controlled) in any of the concept-learning measures. (iii) In conjunctive concept II (unfamiliar figures), the younger and the older groups differed significantly in the measures of number of cards seen, total time taken, number of correct guesses, time lapse between the first and the second hypotheses, and performance index. (iv) In conjunctive concept III (moderately familiar figures), the younger and the older groups differed significantly in the case of all measures except number of cards seen, average time taken per card, and

proportion of correct guesses. (v) In the case of conjunctive concept I, the high and the low groups of ability differed significantly in all the concept-learning measures except in the case of the average time taken per card. (vi) The three education groups did not differ significantly in the use of partist or wholist strategy but they differed significantly in the manner of using a modified hypothesis, a new hypothesis or both types of hypotheses. (vii) Comparing the low and the high groups on the distribution of the 16 personality factors on six of the concept-learning measures of conjunctive concept I, the results indicated that with regard to the total time taken, none of the differences between the high and the low groups on the 16 personality factors were significant.

553. SADDIQUI, A., *A Study of Verbal Behaviour as related to Socio-economic Factors and Personality Predisposition*, Ph.D. Psy., Jod. U., 1979

The study attempted to find out how the verbal ability of children of various age groups progressively developed and which of the factors were responsible for it and to what degree. The investigation was planned to obtain solutions of the following problems: (i) How did the different aspects of language abilities develop from childhood to adolescence? Was there a regular increment in the verbal ability with age? (ii) What was the effect of difference in socio-economic (SE) background on the development of the verbal abilities at different age groups? (iii) How were the different traits of personality associated with verbal abilities at respective SE and developmental levels?

The sample consisted of 900 school-going children of six schools of Jodhpur City. The tests used were sentence completion (grammatical usage), antonyms, synonyms, word fluency, and comprehension and the Hindi versions of H.S.P.Q. and E.S.P.Q. The subjects were tested in small groups of twenty to twenty-five. To each group, the five tests were administered separately in the given sequence. Correlation coefficients and factor analysis were used to analyse the data.

The findings of the study were: (i) In the upper SE level, the adolescent subjects scored higher mean than the late childhood subjects on all the five verbal ability measures. (ii) The late childhood and the childhood subjects of upper SE level appeared homogeneous to a great extent. (iii) In the middle SE level, the adolescent subjects obtained higher mean on three tests (antonyms, synonyms and comprehension) than the late childhood subjects. (iv) The late childhood subjects scored higher

mean on four verbal ability measure (except word fluency) than other children. (v) The verbal ability scores increased significantly from childhood to adolescence at all SE levels. (vi) At the adolescent stage, the performance on sentence completion, antonyms and synonyms increased with SE background. The middle and the lower SE strata did not discriminate significantly. (vii) Significant correlations were observed with the factors B, C, D, E, F, G, I, J, O, Q<sub>3</sub> and Q<sub>4</sub>. The adolescents who were more intelligent, emotionally stable, phlegmatic, assertive, aggressive, enthusiastic, conscientious, venturesome, socially bold, self-reliant, individualistic or reflective, confident, socially precise, and tense scored higher in verbal abilities. (viii) The late childhood subjects who were intelligent, emotionally stable, excitable, enthusiastic, conscientious, venturesome, socially bold and relaxed or tranquil scored higher on verbal ability measure.

**554. SADHNAKUMARI, *Self-esteem and Aspiration as Factors Affecting Risk-taking Behaviour among Deviant Adolescents*, Ph.D. Psy., Agra U., 1980**

The study was mainly concerned with the risk-taking behaviour of deviant and non-deviant adolescent girls in relation to their self-esteem and level of aspiration.

It was an *ex post facto* cum correlational research dealing with three independent variables, viz., self-esteem (SE), level of aspiration (LOA) and behavioural deviance (BD) wherein a 3×3×2 factorial design was used. All types of deviancy, i.e., withdrawing, expectation-evading, rebellious and total were considered. The dependent variable was risk-taking behaviour in which choice-dilemma and behaviour prediction were included. The study was conducted on a randomly selected sample consisting of only female students (age range 13 to 15 years) of a high school of Mathura City. The sample, at the first instance, was 600 of whom 360 were systematically selected as per requirements of the 2×3×3 cells (twenty in each cell). There were seven basic hypotheses for each factorial study. The tools used were Self-esteem Inventory, Level of Aspiration (Singh and Tiwari), Behaviour Deviance Scale (Chauhan), Risk-taking Behaviour (Anwar Yousuf), Choice Dilemma Questionnaire and Behaviour Deviance Scale.

The findings of the study were: (i) Risk-taking behaviour in deviant adolescent girls showed significantly more unethical risk-taking behaviour than non-deviants. Adolescent girls with high self-esteem showed

more risk-taking tendencies, whereas both the extremes of SE (positive and negative) promoted unethical risk-taking behaviour. (ii) Low aspiration promoted risk-taking tendencies in adolescent girls whereas high aspiration promoted unethical risk-taking behaviour. (iii) The two extremes of self-esteem promoted risk-taking behaviour in deviant adolescent girls whereas moderates SE did so in non-deviant girls. (iv) The greater the risk-taking, the higher was the aspiration with positive or moderate self-esteem. It was concluded that deviancy, self-esteem and aspiration independently and simultaneously affected risk-taking behaviour. (v) High aspiration promoted, comparatively, greater magnitude of risk-taking tendencies in deviants but the results showed that low aspirants had comparatively more risk-taking tendencies than high and moderate aspirants. The contradiction in results showed that deviants were unrealistic or realistic only in their own framework and within the deviant group, so they involved themselves in risk situations without thinking of the outcome. (vi) Among the withdrawing type of adolescent girls positive self-esteem was a prominent factor in risk-taking behaviour. Among the expectation-evading type of deviant adolescent girls, moderate level of aspiration (with increased SE) promoted unethical risk-taking behaviour whereas in non-deviants the deterioration in SE increased unethical risk-taking behaviour. (vii) High aspiration with moderate SE promoted unethical risk-taking behaviour in deviants. The maximum magnitude of unethical risk-taking behaviour was noted in deviants when their SE was high but aspiration was low whereas the same was noted in non-deviants when they possessed high SE and high aspiration. (viii) The rebelling type of deviant adolescent girls had significantly more risk-taking tendencies and took more risk in unethical risk-taking behaviour. The low SE significantly promoted risk-taking tendencies as well as unethical risk-taking behaviour. (ix) Moderate aspiration level significantly promoted risk-taking tendencies whereas low LOA promoted unethical risk-taking tendencies.

**555. SANDEEP, P., *Classroom Interaction and Cognitive Development in Primary School Children* Ph.D. Edu., Osm. U., 1979**

The major objectives of the investigation were: (i) to ascertain the level of cognitive development in primary school children, (ii) to ascertain how schools differed in

the classroom interaction strategies, and (iii) to know the influence of classroom interaction on the cognitive development of children. The following hypotheses were framed and tested: (i) If perceptual activities were the bases for the later emerging intellectual operations then there would be an inter-association between reorganization, schematization and topological, projective and Euclidean space dimensions. (ii) If concept attainment followed a sequence from the concrete to the abstract, the qualitative topological features emerged earlier than matrical projective and Euclidean space. (iii) If culture to which the children belonged had a say in the development of concepts, then Indian children would be different from the children of western culture and they should vary in the attainment of these abilities. (iv) Within the Indian culture, if the Indian setting was homogeneous without religious, caste and income influences, then there would not be any differences among the school-going children in the attainment of the cognitive concepts.

The sample consisted of primary school-going children of government schools, private schools, aided schools, Central schools and Montessori schools of Hyderabad and Ranga Reddy district. The children were drawn from Grades IV and V and a small number of children from Grade I were taken for comparison purposes. The instruments used were Typology of Teaching Styles by Bennet and Jordan, Picture Ambiguity Test and Picture Integration Test of David Elkind and others, and Spatial Orientation Tasks of Piaget and Inhelder. Factor analysis was used to analyse the data.

Following were the major findings: (i) Various activities and orientations associated with perceptual activities and spatial orientation were independent of each other. (ii) Children at lower ages were familiar with topological space operation and with increase in age acquired the next operations, projective and Euclidean. (iii) Age was related to increase in perceptual activity of reorganization; while younger children were more figure-oriented, older children were ground-oriented. (iv) Children's achievements in perceptual activities and cognitive operations were found to be based on their respective background like sex, religion, caste, income, parents' education, occupation and leisure activity. (v) Schools differed in their classroom interaction which affected adversely the attainment of perceptual and cognitive skills.

556. SANDHU, T.S., *A Factorial Study of Adolescent Thought Using Piaget-type Tasks*, Ph.D. Edu.,

Raj. U., 1981

The study was undertaken with a view to investigate structure of thinking at formal operation stage. Effort was made through this study to analyse the adolescent thought mathematically using the factor analytical technique to identify its underlying structure and to explore the extent of the relationship of the development of adolescent thought with age, sex, intelligence, academic achievement, reasoning ability, space relations, adjustment and fourteen dimensions of personality.

A sample of 986 students (505 boys and 481 girls) was drawn randomly from the students of twelve high schools of rural areas in Punjab taking an almost equal number of boys and girls from the age groups 11+, 12+, 13+, 14+ and 15+ studying in Classes VI, VII, VIII, IX and X respectively. Data were collected using the Test of Piaget-type Tasks developed by the investigator, Cattell and Cattell's Culture Fair Intelligence Test Scale-2, Jalota's General Mental Ability Test, Dubey's Reasoning Ability Test, Bennet and others, Space Relation (DAT), Adjustment Inventory, and Cattell and Belott's High School Personality Questionnaire. Academic achievement was measured in five school subjects. Correlation coefficients, one-way analysis of variance and factor analysis were used to analyse the data.

The findings of the study were: (i) The performance of adolescents on the Piaget-type tasks increased with age during the formal operation period. (ii) The performance of boys on some of the Piaget tasks at certain age levels was superior to that of girls while there was no significant difference in the remaining cases. (iii) The measures of intelligence, both verbal and non-verbal, correlated significantly with the measures of adolescent thought in a positive direction. (iv) Academic achievement had a significant positive relationship with the measures of reasoning ability. (v) Reasoning ability and space relations proved to be some of the determinants of the development that led to the better adjustment of the individuals or vice versa. (vi) The performance on the Piaget-type tasks formed an interrelated measure of adolescent thought which exhibited a unifactor structure. (vii) Personality traits like outgoing tendencies, abstract thinking, emotional stability, phlegmaticism, obedience, conscientiousness, adventurousness, feeling of security, self-discipline and relaxedness were found related with the development of adolescent thought whereas reservedness, concrete thinking, emotional instability, excitability, assertiveness, expedience, shyness, feeling of insecurity, uncontrollability and tense-

ness were found to be significantly related to the non-development of adolescent thought.

557. SARKER, A.K., *Relationship between Mental Health and Some Family Characteristics of Middle Class School-going Adolescents*, Dept. of Edu., Kal. U., 1979 (Kal. U.-financed)

The objectives of the investigation were: (i) to study the structure of the family today, and (ii) to find out the relationship between children's mental health and their family characteristics, namely, family structure and family tension.

The sample consisted of randomly selected 400 school-going children (212 boys and 188 girls) of age group 13 to 17 years. Mental health inventory was administered on the 400 children selected and on the basis of results obtained healthy and unhealthy groups were formed. Thus twenty-four healthy and eighty-four unhealthy children were found. These children were interviewed through the Children's Interview Schedule (seeking information about who did and who decided about various household activities and the extent to which disagreement between parents existed in decision-making) and a biodata sheet. Estimates of family structure (on the basis of who did and who decided about various household matters) and family tension (measured by the extent of disagreement between parents in decision-making) were then found from the Children's Interview Schedule, while the biodata sheet was used for having an idea about the nature of the sample studied. The data were analysed statistically and the groups were compared for the variable under study through the t-test.

The conclusions were: (i) Families today had mostly either autonomic (which means parents to be mostly independent) or mother dominant (mother is to be the decision-maker mostly) family structure. (ii) The mentally unhealthy group of children had higher family tension than the healthy group. (iii) The children from families with syncretic division of functions had better mental health. (iv) The family structure (excepting syncretic division of functions) was not related to the mental health of the children.

558. SARKER, A.K., *Correlates of Children's Attitudes towards Their Parents*, Dept. of Edu., Kal. U., 1980 (Kal. U.-financed)

The objective of the study was to examine the re-

lationship between children's attitude towards their parents and variables like children's perception of parental love, their birth order, sex and some aspects of personality.

The sample consisted of 276 school-going adolescents (138 boys and 138 girls) selected at random from among the students of Classes IX and X of some randomly selected schools in the districts of 24-Parganas, Nadia and Hooghly in West Bengal. The children were all day scholars attending school for about six hours a day and generally coming from the middle class families. Personal Data Blank and Children's Attitudes towards Parents Scale (Forms F and M) developed by the author, short Bengali form of the Bernreuter Personality Inventory and relevant part of the Calcutta Inventory were used for gathering data which were statistically analysed.

The conclusions of the study were: (i) Attitude scores were normally distributed. (ii) Children's attitude towards their mothers were curvilinearly related to their perception of mother's love, ( $r=0.43$ ) while that towards their fathers was positively related ( $r=0.35$ ). (iii) Boys and girls with favourable and unfavourable attitudes did not differ with respect to their personality (neuroticism, sociality, introversion and dominance). (iv) Children recorded more favourable attitudes towards their mothers than towards their fathers. (v) Girls had more favourable attitudes towards their parents than boys. (vi) The third-born children's attitudes towards their fathers and mothers differed significantly. (vii) The first-born children had more favourable attitudes than the second-born. (viii) Attitude curve fluctuated with the birth order when children and parents were of opposite sex but increased slowly and steadily after the second child when children and parents were of the same sex.

559. SAROJINI, S., *Personality Problems of Pupils of Age Group 8 to 16 Years*, Ph.D. Psy., Madras U., 1971

The main objective of the study was to find out the personality problems of pupils of the age group 8 to 16 in terms of behaviour, adjustment, emotionality and neuroticism.

Six tools were used to collect data. Parent's Inventory required the parents to rate the problems of pupils on a five-point scale in seven areas. Teachers' Inventory gathered similar information from teachers for five of the seven areas included in Parent's Inventory. An Ad-

justment Inventory adapted from Bell's Adjustment Inventory was administered to pupils of the age group 14 to 16 and another Adjustment Inventory with similar items but without problems pertaining to adolescence was administered to pupils of the age group 8 to 13. A cross-out test of the Pressey X-0 test type and Junior Eysenck Personality Test were also used. A sample of 1,500 pupils of the age group 8 to 16, of average intelligence, was selected and the data from 1,120 pupils were subjected to one-way and two-way analysis of variance.

The major findings were: (i) Personality problems in terms of behaviour, emotionality and neuroticism were significantly more during the period of early adolescence than during the period of late childhood and pre-adolescence. (ii) Behaviour, emotionality and adjustment problems were significantly more for boys than for girls during the period of late childhood and pre-adolescence. (iii) Emotionality and adjustment problems were more for pupils in coeducational institutions than for those in single sex schools. (iv) Behaviour, emotionality, neuroticism and adjustment problems were experienced more by pupils from low socio-economic status than those from upper, upper middle and lower middle levels. (v) During the years 14 to 16, boys had more adjustment problems than girls. (vi) Interaction in personality problems (behaviour as rated by teachers) was observed during the periods of late childhood, pre-adolescence and early adolescence for boys and girls. No such interaction was found in emotionality, neuroticism and parents' rating of behaviour problems.

**560. SAXENA, M.,** *A Study of Children's Problem-solving and Decision-making Strategies*, Ph.D. Psy., Del. U., 1980

The objective of the study was to investigate the possible strategies adopted by children in a sample problem-solving and decision-making situation.

To study the strategies, the study was designed in the form of two experiments, problem-solving and decision-making situations, through a process analysis of the behaviour of children. The first experiment was conducted on 6-12-year-old children from high and low socio-economic status groups represented by public and corporation schools, respectively. They were further subdivided into 6-8, 8-10, and 10-12-year-old children in both the socio-economic status groups. Thirty male children were included in each of the six groups. A problem series, consisting of six problems, each of which had similar basic elements, was devised. The second experi-

ment, the decision-making experiment, was conducted on 10-12-year-old children of the higher and the lower socio-economic status groups who had been included in the first experiment. The development of decision-making strategies was investigated in a mixed motive situation as represented by the Prisoner's Dilemma Game.

The findings were: (i) While in a problem-solving situation the dead-ends were overcome by the creation of sub-goals related to the final goal states, the subjects in a decision-making situation abandoned the goal itself. (ii) In a decision-making situation, the interpersonal character of the situation where no strategy could be worked out without the cooperation of the partner, did not provide scope for the manifestation of total strategies or plans as made by the subjects. (iii) If the constraints of the interpersonal situation were made more relaxed, interspersed with no contingent gains and losses, the strategic manoeuvres were better understood.

**561. SAXENA, S.,** *A Study of Need Achievement in relation to Creativity, Values, Level of Aspiration and Anxiety*, Ph.D. Edu., Agra U., 1981

The study was conducted (i) to find out the nature and extent of relationship between n-Ach and creativity, values, the level of aspiration and anxiety, (ii) to find out the sex difference in n-Ach as regards creativity, values, the level of aspiration and anxiety, and (iii) to establish regression equation for n-Ach using creativity, values, the level of aspiration and anxiety as predictors.

The study was conducted on a sample of 300 male and 300 female students of Classes IX and X selected from different schools of Agra City from science and arts faculties only. The tools used were the Achievement Motivation Test (Prayag Mehta), Verbal Test of Creative Thinking (Mehdi), Level of Aspiration Test (Shah and Bhargava) and the Sinha Anxiety Scale. An *ex post facto* design was adopted.

The following were the main findings of the study: (i) correlation between n-Ach and creativity was significant among the subjects of high and low creativity levels. (ii) The religious value was positively related and the health value negatively related to n-Ach in the case of boys, and the democratic value was positively related and the hedonistic value negatively related to n-Ach in the case of girls. (iii) For the total sample, the religious value was positively related and the hedonistic value negatively related. For other values, the relationship was not significant. (iv) Regarding sex differences for various values, there were significant differences in the democratic and

the power values. For the other values there were no differences. (v) Boys and girls having high and low value scores did not differ significantly on n-Ach; similarly, for the entire sample, the position of values did not affect n-Ach. (vi) There was relationship between n-Ach and the level of aspiration. (vii) Sex differences were significant as far as the level of aspiration were concerned; boys and girls having high level of aspiration differed significantly regarding n-Ach scores whereas those having low level of aspiration did not differ significantly regarding n-Ach. On the total sample also, the difference in the level of aspiration and n-Ach was not significant. (viii) There existed no significant relationship between n-Ach and anxiety. (ix) Sex differences between n-Ach and anxiety were significant, the subjects having high and low anxiety did not differ significantly on n-Ach. (x) Values, creativity, anxiety and the level of aspiration were predictors of n-Ach for both boys and girls, separately.

**562. SEN GUPTA, M.,** *Intellective and Non-intellective Factors Associated with Engineering Creativity*, Ph.D. Edu., Mee. U., 1979

The objectives of the study were: (i) to investigate, systematically, differences in mechanical reasoning which pertained to mechanical and physical principles in familiar situations between high and low creative groups, (ii) to compare differences between high and low creative groups on a measure of value orientations based on Spranger's theory of values, (iii) to find out differences between high and low creative groups in their perception of cognitive simplicity and complexity, (iv) to compare differences between high and low creative groups on a measure of intolerance of ambiguity, (v) to find out the contribution of each variables to the multiple correlation or more specifically the percentage of variance in the dependent variables, and (vi) to rearrange or reduce the data by factor analytic techniques to a smaller set of factors or components that might be taken as source variables accounting for the observed interrelations in the data.

The hypotheses formulated were: (i) There was no significant difference between high and low creative subjects on the mechanical reasoning ability which could be regarded as one aspect of intelligence. (ii) There was no significant difference between high and low creative individuals in their theoretical, economic, aesthetic, social, political and religious value orientations. (iii) There was no significant difference between high and low creative individuals in their perception of cognitive simpli-

city and complexity. (iv) There was no significant difference between high and low creative subjects on a measure of intolerance of ambiguity.

The sample consisted of 522 students drawn from the boys' polytechnics of Delhi. The study used Purdue Creativity Test, Culture Fair Intelligence Test, Mechanical Reasoning Test, Value Test, Perceptual Simplicity-Complexity Test and Intolerance of Ambiguity Scale. The study applied the techniques of analysis of variance, multiple regression and factor analysis.

The findings were: (i) High and low creatives differed significantly on intelligence, mechanical reasoning, economic value, aesthetic value and religious value. (ii) Perceptual simplicity-complexity variable evidenced significant differences indicating that the high creatives had a greater appeal for the complex, unfinished and the imperfect. (iii) High creatives were more tolerant of ambiguity than the low creatives. (iv) Intelligence, mechanical reasoning, economic value, religious value and perceptual simplicity-complexity were significantly correlated with total creativity. (v) Intolerance of ambiguity was negatively correlated with total creativity. (vi) The single best predictor of creativity was intelligence. The second and the third factors in order of importance were the religious values and the economic values. (vii) Varimax rotated factor analysis yielded five factors, namely, intellective factor, value factor, factor of religious value, stylistic factor and factor of openness.

**563. SETH, M.,** *A Psychological Study of Learning Process with special reference to Audio-Visual Aids*, Ph.D. Psy., Kan. U., 1974

The investigation aimed at studying the learning process in two developmental areas, viz., speech learning and language learning. The hypotheses were: (i) The socio-economic status in which the child is born and brought up affects the learning of speech. (ii) A child with good physical health would tend to acquire a larger vocabulary than the one in poor health. (iii) The children of working mothers would tend to have smaller vocabulary than the children of non-working mothers. (iv) An only child would tend to acquire a larger vocabulary than a child with siblings. (v) Girls would tend to acquire a larger number of spoken words than their male peers. (vi) Children with higher I.Q. would tend to attain high scores in language learning as compared to children with lower I.Q. (vii) The achievement and gain scores of children taught with the help of audio-visual aids would tend to be high as compared to those of chil-



dren not receiving audio-visual aids. (viii) Audio-visual aids would tend to shorten the gap of achievement between the children of higher and lower I.Q.

The sample comprised thirty students. The Socio-Economic Status Scale (Kuppuswamy), Intelligence Test by Valentine and test for language achievement were used for collecting data. For teaching with the help of audio-visual aids, flannel board with an accompanying recorded voice was used. The analysis of variance followed by the t-test was used for analysing the data.

The findings were: (i) A child uttered his first word at about the age of one year. (ii) The size of vocabulary was influenced by SES of the infants. (iii) The infants who had very good health were not found to be significantly different in the mean number of words spoken by them from the infants having very poor health. (iv) The vocabulary size was not affected whether mother was working or not, yet the differences were significant at the initial stages of speech learning (first spoken word). (v) Infants having no sibling and those having sibling did not differ significantly in their vocabulary size. The differences were significant at the initial stages of speech learning. (vi) Sex was not found to be a very effective factor in speech learning. (vii) Intelligence was highly correlated with the achievement of girls language learning. (viii) The audio-visual aids were found to be more beneficial for the girls of the lower I.Q. group than for the girls of high I.Q. but they increased the achievement scores of the girls of higher I.Q. as well.

**564. SHAH, C.K.,** *A Study of Personality Development of Children as a Function of Parental Authoritarianism*, Ph.D. Psy., MSU, 1976

The investigation was primarily concerned with studying parental authoritarianism in relation to the personality of children. It further sought to compare boys and girls of high as well as low authoritarian parents in respect of a number of personality characteristics.

The sample comprised 300 parents and 300 children (140 boys and 160 girls) selected from rural and urban schools. The tools used were Parental Authoritarianism Scale (PAS) and modified version of Cattell's 16 PF Test. The factorial design,  $2 \times 2 \times 3$ , with two levels of parental authoritarianism, two categories of sex and three levels of birth order, was used to study the effect of parental authoritarianism separately for each parent. Also, a  $4 \times 2 \times 3$  factorial design was used with four levels of parental authoritarianism, two categories of sex and three levels of birth order to study the joint effects of parents.

The major findings were: (i) The main effect of mother's authoritarianism was significant in the case of the first fifteen factors of 16 P.F. Test. The mother effect was, however, not dependent on the sex effect and the effect of birth order in the case of factors A, G, H. The children of low authoritarian mothers seemed to be more mature, emotionally accepting, trustful, warm, cultured, radical and independent-minded than the children of high authoritarian mothers. (ii) The low authoritarian group of subjects seemed to be more interested in people, more sociable and warm-hearted than the high authoritarian group of subjects. The effect of father's authoritarianism was significant in the case of factors A through G, L, Q<sub>1</sub> and Q<sub>3</sub>. (iii) The main effect of parental authoritarianism was significant in the case of all the sixteen factors. Its interaction with sex and birth order was also significant in the case of factors A, G, H, I, and Q<sub>3</sub>. The children with both the parents low in their authoritarian attitudes were good natured, ready to cooperate, attentive to people, soft-hearted, kindly and adjusting in comparison with the children whose parents were quite high in authoritarian tendencies.

**565. SHAHIN, A.,** *A Study of Intellectual Abilities and Psycho-social Motor Behaviour among Pre-school Children*, Ph.D. Psy., Agra U., 1971

The objective of the research was to study developmentally, intellectual abilities and psycho-social motor behaviour. The tools used were the NCERT Battery of Intelligence Tests for ages 3 to 13 while three tests were developed by the investigator to measure motor, language and personal social behaviour. In the preliminary try-out, 200 children in the age group thirty to seventy-two months were covered while in the final study 500 children, with equal number of cases at six-month intervals from three to five years were taken.

The major findings were: (i) Intelligence, motor, language and personal-social behaviour developed in an interrelated manner. (ii) The interrelationships of behaviour did not continue in a uniform manner throughout life. (iii) There was no uniformity of development at different age levels indicating sudden spurts at certain stages. (iv) Reversions in development were not the rule as evidenced in other studies. (v) Differences in development were evident in the case of rural and urban children and also among children of different occupations; differences were also found among bright and dull children. (vi) In-depth study revealed interaction of organism with environment. (vii) The rapidity of develop-

ment of certain functions over others in early life could not be ascertained. However, on comparison of the rate of development at four years and three years, the earlier period indicated rapidity. (viii) As regards motor behaviour, the rate of development was faster among bright children than among dull children; as regards language, on the whole, the dull children seemed to progress more; in personal-social behaviour there was hardly any difference. (ix) Abilities, as measured by the subtests of the test of intelligence, were positively related. (x) There were significant sex differences in motor and personal-social behaviour.

**566. SHANMUGAM, T.E.,** *Adolescent Personality — an Investigation of the Emotional Instability of Adolescent Boys of Low Socio-economic Families*, Ph.D. Psy., Madras U., 1956

The major objectives of the investigation were: (i) to study the adjustment problems of adolescents, (ii) to find out the symptoms and syndromes of emotional instability of adolescent boys of low socio-economic families, and (iii) to find out the causes for emotional instability. The sample consisted of 220 adolescents selected at random from two socio-economic levels, higher and lower.

The techniques to collect data were consultation of school records, academic and medical, and interviews of subjects and subjects' parents and teachers. Two psychological tests — a personality inventory and a verbal projection test — both constructed by the researcher, were the main tools of research.

Some of the major findings were: (i) The age group of 15, the puberty group, and Hindu religion were important factors influencing emotional instability of adolescents. (ii) Hypersensitivity and excitability were two important syndromes. (iii) The age group of 15 was characterized by greater emotional instability and the important syndromes in this age group were hypersensitivity, anxiety, orientation towards reality and neurasthenic tendencies; in other age groups, hypersensitivity alone was important. (iv) The puberty group had significantly greater number of individuals with neurasthenic tendencies and sleep difficulties. (v) Among the syndromes, hypersensitivity, anxiety, sleep difficulties and orientation towards reality were important in the puberty group whereas hypersensitivity and excitability were important in the non-puberty group. (vi) Among the Hindu group, hypersensitivity was the important syndrome whereas in other religious groups the syndromes of

hypersensitivity, excitability and anxiety were important. (vii) Puberty was found to be an important factor in the case of total number of needs. Adolescents who had attained puberty had greater number of needs; those who had not attained puberty viewed the environment as more frustrating than those who had; they manifested a greater degree of maladjustment also. (viii) There was no significant difference between the values under frustrating and helpful influences from the environment. The reactions showing emotional instability were significantly greater than the reactions showing stability. The maladjustment traits of personality were greater than the adjustment traits. Pessimism and gloom appeared more than satisfactory endings. (ix) The causes for emotional instability at the unconscious and conscious levels were the same, namely, need frustration from the environment and predisposition towards emotional instability.

**567. SHARMA, A.,** *Development of Prejudice in the Young Child: an Empirical Study in New Delhi*, Ph.D. Home Science, Del. U., 1979

The objectives of the investigation were: (i) to study the development of prejudice in children in the age range 4–8 years, and (ii) to ascertain the influence of the socio-cultural variables on the development of prejudice in children.

Two hundred and forty children, 120 from the upper socio-economic stratum and 120 from the lower socio-economic stratum, formed the sample; the fathers and mothers of these children were also studied. An individual test was especially designed to measure awareness, preferences and evaluative dimensions of prejudice, it included pictorial cards and models. Parents were also interviewed for information about their socialization role and prejudices.

The findings were: (i) Awareness of social groups of class, caste and religion increased with age. (ii) The children of the upper socio-economic stratum had higher awareness. (iii) With increase in age children from both the socio-economic groups revealed greater preference for upper class and caste and assigned more negative attributes to the lower class and caste. (iv) No age trends were observed in preference for religions; maximum preference was indicated for Hindus, followed by Muslims, Christians and Sikhs in descending order. (v) The children of the lower socio-economic status groups assigned more negative attributes to Muslims and Christians. (vi) Socialization techniques and parental attitudes

influence; the children's preferences for the lower class, caste and minority religions. (vii) Parents from the upper socio-economic status groups were more active in controlling and guiding their children. (viii) The couples of the lower socio-economic status groups had greater agreement and harmony in using similar socialization techniques.

568. SHARMA, B., *Impact of Culture on the Pattern of Personality in Two Indian Tribes (Khasi and Naga)*, Ph.D. Edu., Gau. U., 1977

The main objective of the study was to understand the personality pattern in relation to culture with particular reference to two Indian hill tribes, viz., the Khasi and the Naga.

A psychological approach to anthropological material was attempted. Three villages were chosen both from Khasi hills (Khasi tribes) and Nagaland (only Angami tribe). In all, 150 cases (Seventy-five male and seventy-five female) were selected at random from each tribe. Bhatia's Battery of Performance Test of Intelligence, Sodhi's Attitude Scale, Introversion-Extraversion Test, Personality Schedule (Bore) and the T.A.T. were used. Before collecting the final data a pilot study was made on a sample of thirty persons to find out the efficacy of these devices and the method of study.

The study revealed: (i) Culture was a very important factor in moulding one's personality. (ii) The Khasis and the Nagas had outstanding difference between their family pattern; they had had some unique cultural practices which were common to all hill tribes. These similar cultural practices had some effect in creating similarity in their personality pattern. Likewise, differences in cultural practices led to differences in some of the personality variables. (iii) By applying the test of significance it was observed that the two tribes differed significantly in terms of achievement, dominance, conflict, defection, attitude towards religion, intelligence and extraversion-introversion. No significant difference was found in the case of aggression, anxiety and attitude towards life and humanity. The two tribes were not alike in spite of the similarities noticed in their culture. (iv) The Nagas obtained a significantly higher scores in the areas of achievement, dominance, conflict and attitude towards religion whereas the Khasis were significantly higher on intelligence extraversion-introversion and dejection. (v) The Khasi females were significantly more extrovert than the Naga females. (vi) The Naga males were significantly higher in anxiety than the Khasi males.

569. SHARMA, K.L., *A Comparative Study of Self-concept of High and Low Achievement and Intelligence Groups of Students of Class Tenth in Urban Schools of Bareilly*, Ph.D. Edu., Agra U., 1978

The main objectives of the study were: (i) to find out the relationship between any two of the four main variables, namely, intelligence, socio-economic status (SES), academic achievement and self-concept, (ii) to find out the relationship of academic achievement, intelligence, SES and self-concept, respectively, with different areas of self-concept, namely, aspiration, confidence, emotionality, inferiority, physical appearance and the withdrawing tendency in various groups, (iii) to find out the inter-correlations among different variables, (iv) to examine sex differences in various groups, (v) to predict self-concept on the basis of intelligence, SES and achievement, (vi) to predict achievement on the basis of six areas of self-concept in combination with either intelligence or SES factors in the controlled high and low achieving groups, and (vii) to predict self-concept on the basis of its six areas in high and low achieving groups, sex-wise. The study was conducted on a sample of 1,427 students (690 male and 737 female) of Class X whose age ranged from 14 to 18 years.

The findings of the study were: (i) Intelligence showed strongest relationship with achievement but the relationship between intelligence and self-concept was not significant in extreme intelligence groups. (ii) SES showed weak positive relationship with intelligence. (iii) Students having high intelligence also had high self-concept, achievement and SES and students having low intelligence had low self-concept, achievement and SES. (iv) Intelligence showed strong relationship with six areas under self-concept and achievement; intelligence made high positive and significant contribution. (v) SES did not show strong relationship with self-concept and other variables. In the low intelligence group it was negatively correlated. (vi) Achievement showed highest relationship with intelligence. (vii) Self-concept showed high positive and significant relationship with achievement and intelligence. (viii) Boys were found to be superior to girls in all areas on self-concept.

570. SHARMA, M., *A Study of Satisfaction and Dissatisfaction with School among Adolescent Boys in relation to Their Personality Characteristics, Intelligence, Scholastic Performance and Socio-economic Status*, Ph.D. Edu., Punjabi U., 1980

The objectives of the study were: (i) to examine the

relationship of satisfaction and dissatisfaction with personality characteristics, intelligence, scholastic performance and socio-economic-status, and (ii) to probe the differences in personality traits, scholastic performance, intelligence and socio-economic status between two groups of adolescent boys—those who were satisfied with their school and those who were dissatisfied.

The sample consisted of all the 310 students of Class IX of a local school in Patiala. They were administered the self-structured and standardized school satisfaction scale. On the basis of their scores on this scale, the students were identified as satisfied and dissatisfied. In this way eighty satisfied and eighty dissatisfied students formed the sample. These students were administered the Junior-Senior HSPQ, Group Test of General Mental Ability, (Tandon and Jalota) and the Socio-Economic Status Scale (Kuppuswami). The aggregate marks obtained by these students in the middle standard examination conducted by the Punjab Board of School Education were taken as a measure of their scholastic performance. The data were analysed using correlation co-efficients and t-test.

The findings of the study were: (i) Students' maximum satisfaction lay within the students themselves. Next in order, were syllabus, textbooks and the school plant, whereas the least satisfaction was with the teacher. (ii) Academic achievement and school satisfaction had a significant positive relationship. (iii) There was a significant difference between the achievement of satisfied students and that of dissatisfied students. (iv) Intelligence and school satisfaction were highly related. (v) There was a significant difference between the intelligence scores of satisfied and dissatisfied students. (vi) School satisfaction and socio-economic status were positively related. (vii) There was a significant difference between the socio-economic status scores of the satisfied and the dissatisfied groups; the satisfied students belonged to higher socio-economic status than the dissatisfied group. (viii) The satisfied and the dissatisfied group of students differed significantly in almost all the personality traits measured through the HSPQ.

571. SHARMA, N., *Development of Prejudice in Children*, Ph.D. Psy., Sag. U., 1978

The objectives of the study were: (i) to investigate the development of prejudice in children in relation to caste, class, sex and religion, (ii) to investigate the sources of development of prejudice in the different age groups, (iii) to find out the correlation between parental pre-

judice and children's prejudice, and (iv) to identify the relevant factors which influence the development of prejudice in children. The hypotheses tested in this study were: (i) Prejudice increased with age; with younger children it might be the fear of parental scolding which might inculcate discriminating behaviour. (ii) The nature of prejudice of parents significantly influenced the pattern of prejudice of children. (iii) Children developed different types of prejudices at different age levels.

The study was conducted on 200 school children of Saugar in the age group five to eleven years. The sample comprised both boys and girls, and their parents. The dependent variable in the study was prejudice with reference to caste, class, religion and sex, and the independent variables were identification and differentiation through socialization practices and parental attitudes. Interview guide, attitude scale and pictorial test were the instruments used to collect data. In order to derive meaningful interpretation of the data, the analyses were carried out with reference to certain theories on the development of prejudice. The data were analysed by using chi-square test and one-way analysis of variance.

The findings were: (i) The development of Prejudice was slower among girls than among boys. (ii) Age was significantly related to class, caste and religious prejudices. (iii) There was a difference in the two sexes in the sequence in which the four types of prejudices developed. (iv) Caste prejudice developed faster in boys than in girls. (v) Prejudice against different class groups was very diffuse and could not be observed in the sample. (vi) The nature and degree of prejudice of the sample was a direct function of parental prejudice. (vii) The overall prejudice of parents was high though there was a variation in the degree of prejudice of the four types, the lowest being the class prejudice. (viii) Mother's influence on the development of prejudice among school-going children was more than that of the father. (ix) In terms of sequence the children first developed sex prejudice, than caste prejudice followed by religious and class prejudices.

572. SHARMA, R.K., *An Analysis of Factors Influencing the Behaviour Patterns of Adolescents Studying in Different School Environments*, Ph.D. Edu., Pan. U., 1978

The major objectives of the investigation were: (i) to study the behaviour patterns of the normal adolescents studying in different school environments, (ii) to study the interrelationship of areas of behaviour patterns of

normal adolescents studying in different school environments, (iii) to analyse the factors of the behaviour patterns which were influential in different socio-economic status (SES) schools, (iv) to make a comparative study of the areas of behaviour patterns and factors of behaviour patterns of normal adolescents among different school environments, and to find out the differences, if any, and the levels of significance of the differences, and (v) to attempt to offer suggestions regarding the adolescent development in the Indian situation in the light of the findings of the study.

The sample for the study included 400 normal adolescent in the age range 13+ to 16 years, who had intelligence quotient of 100 or more, and who had not created any behaviour problems; they were selected from four different SES level schools of Punjab. The tools used were Bhatia's Performance Test of Intelligence, Verbal Test of Intelligence prepared and standardized by the Bureau of Psychology, Allahabad, Socio-Economic Status Scale (urban and rural forms Kulshreshtha), Self-Disclosure Inventory by Sinha, Hindi adaptation of Self-Image Questionnaire by Offer and a Sociometric Questionnaire and an SES questionnaire for schools developed by the investigator. Coefficients of correlation, t-ratio, mean, standard deviation, standard error of means were computed for the analysis of data.

The major findings of the study were: (i) Intelligence was an influencing factor in the development of behaviour pattern of the students in all types of schools. (ii) Behaviour pattern of adolescents in low SES schools was significantly better than that of adolescents in the high SES schools. (iii) The intelligence level in moderately high SES and high SES school adolescents was significantly higher than that those in the two other categories. (iv) Schools' SES did not significantly influence the sociometric status of the adolescents. (v) The normal adolescents were not rejected by their peers in any type of school environment. (vi) The more the emphasis on sophistication and the more the complexities in the environment of the school, the lower were the behaviour patterns, and *vice versa*. (vii) On the basis of the total sample the behaviour patterns of normal adolescents were positively influenced by intelligence, self-disclosure and sociometric status, whereas they were negatively influenced by the SES of the family.

573. SHEEL, A.P., *Task Performance as a Function of n-Achievement, Anxiety, and Creativity among Male and Female Adolescents*, Ph.D. Psy., Agra U., 1981

The objectives of the investigation were: (i) to determine and study the characteristic influences of the three components of creativity, need achievement and anxiety on task-performance (TP) in three need achievement conditions of male and female adolescents, (ii) to study the first and second order interactions for deeper understanding of the problem in view, and (iii) to study the further break-up of trivariate interactions.

The study was an *ex post facto* research for studying interactions among the independent variables. The independent variables (n-achievement, creativity and anxiety) were studied in retrospect for their possible relation to and effects on the dependent variable, task-performance. The study used a fixed model consisting of twenty-four  $2 \times 2 \times 2$  factorial experiments. The sample comprised male and female students studying in first year and second year arts and science faculties belonging to middle socio-economic status within an age range of 15 to 18 years. The final sample consisted of 120 students selected out of 640 units of the first stage sample. The task-performance in all the three conditions of need achievement was assessed by scrambled word task test. The tools used for the measurement of need achievement, anxiety and creativity scores of the subjects were Achievement Motivation Test (Rao), IPAT Anxiety Scale Questionnaire (Cattell and Schier) and Verbal Test of Creative Thinking (Mehdi).

The findings of the study were: (i) Need achievement had an important and significant positive relation to task-performance among both male and female adolescents. It was the high need achievement which favoured task-performance. (ii) Need achievement conditions—relaxed (R), neutral (N) and aroused (A)—were found to have task-performance pattern like RNA. This pattern was common at high and low levels of fluency, flexibility and originality as well as at high and low levels of anxiety. (iii) Task-performance of male Ss having HH level of n-achievement and test anxiety was better than Ss of HL, LL and LH level of n-achievement and test anxiety. Similarly, Ss having LH level had better performance than LL and HL levels of n-Ach and test Anxiety. (iv) The success of male adolescents on task-performance was influenced by their anxiety levels. High anxiety Ss had better task-performance. Among females, low anxiety Ss had better task-performance than high anxiety Ss. Anxiety was dependent either on fluency or on originality. It was found that Ss having high fluency, flexibility, originality and creativity had better task-performance than Ss who were low in these qualities. Similar pattern was obtained for male and female Ss in relaxed, neutral and aroused condition. (v) Creativity, in-

dependent of anxiety, was found to promote task-performance in RNA condition among female Ss and in neutral aroused condition among male Ss, but it was independent in R condition in the case of male Ss. Fluency, dependent on n-Ach, promoted task-performance among male Ss but among female Ss it was independent while promoting task-performance. Flexibility, independent of n-Ach, promoted task-performance in RNA condition. Originality, independent of n-Ach, promoted task-performance among female Ss in RNA condition. (vi) Anxiety, independent of n-Ach, promoted task-performance among female Ss in RNA condition but among male Ss it was dependent on n-Ach, while promoting task-performance in RNA condition.

**574. SHIVANEKAR, L.M.,** *The Effect of Pictures and Contextual Conditions on Learning Responses to Printed Words*, Ph.D. Edu., Poona U., 1979

The major objectives of the inquiry were: (i) to find out the effect of pictures on learning new words, (ii) to find out the effect of the context of learning new words, (iii) to find out the combined effect of pictures and the context on learning new words, (iv) to find out the effect of contextual and pictorial clues on pupils of Classes I and II, (v) to find out the effect of contextual and pictorial clues in different scripts, and (vi) to study the sex differences with respect to the effects of contextual and pictorial clues. The study was restricted to children of Classes I and II and limited to the recognition of a few words.

The method consisted of the use of a  $4 \times 3 \times 2$  factorial design — four treatments, three scripts and two classes. The four treatments were word-no picture (T1), word-picture (T2), sentence-no picture (T3), and sentence-picture (T4). The three scripts were English, Devanagari and Malayalam; only four words were selected for experimentation. The sample included fifteen schools — five English medium, five Marathi medium, and five Malayalam medium. In each school, twenty children were selected at random from Class I and an equal number from Class II. Thus, the sample for the experiment comprised 300 children of Class I and 300 children of Class II. Analysis of variance was used for the analysis of data.

The major findings were: (i) Association of pictures with new words to be learnt had an adverse effect on learning them. (ii) Association of any context with new words to be learnt had an adverse effect on learning the words. (iii) Combination of pictures and contexts in association with new words to be learnt had an adverse ef-

fect on learning them. (iv) The contextual and pictorial clues had the same effect on the pupils of Class I and Class II in learning new words. (v) The contextual and pictorial clues had the same effect in different scripts. (vi) The scripts selected for the experiment differed in their difficulty values. (vii) While teaching reading to beginners, whether individually or in group, the word alone method was found to be more efficient than the word picture method in fixing new words and this held good for boys as well as for girls.

**575. SHRIVASTAVA, O.P.,** *Stresses and Coping Mechanisms of Physically Handicapped Children*, Ph.D. Psy., All. U., 1981

The objectives of the investigation were: (i) to trace the stressful life events encountered by physically handicapped individuals and the coping mechanisms employed by them, and (ii) to compare the attitudes and coping mechanisms of the handicapped subjects of the high and the low competence.

For the purpose of the study, a sample of 160 male physically handicapped and 160 non-physically handicapped subjects was selected. Handicapped subjects (orthopedics) were selected from vocational training institutions and general educational institutions located in Allahabad City. The subjects of both the groups were between ten and twenty-one years of age. Both the groups were matched on age, sex, the type of training and education, religion and income per month per member of the family. For selecting handicapped subjects of high and low competence, competence ratings of each handicapped subject were collected from the class teacher/instructor. The subjects whose competence scores were above  $P_{75}$  and below  $P_{25}$  of the distribution of scores were designated high competence subjects and low competence subjects, respectively. The data were collected with the help of the stress scale, the immediate emotional experience scale, the coping schedule, the support scale, and the causes of suffering and consequences of suffering schedule developed by the investigator.

The findings were: (i) The handicapped subjects reported greater number of stressful life events related to ego-threat, uncertainty of the future and living conditions categories. They had higher mean stress perception scores than the normal subjects in all the ten categories of the stress scale. (ii) The high competence subjects perceived less stress than the low competence subjects in all the ten categories. (iii) The high compe-

tence subjects experienced a greater number of positive emotional reactions than the low competence subjects of the handicapped group. (iv) The high competence subjects made more task-related responses while the low competence group also endorsed more task-related responses than non-task-related responses but the ratio of the task-related items to non-task-related items was greater in the former group. (v) The high competence subjects did not perceive greater amount of support extended to them in their environment. (vi) The high competence and the low competence subjects did not differ with respect to attitudes towards the causes of suffering. The high competence subjects attributed blame more to society, God and government while the low competence subjects blamed the family, God and circumstances for greater sufferings in their lives. (vii) The high competence subjects endorsed a larger number of positive and negative consequences arising out of suffering than the low competence subjects.

**576. SHUKLA, J.P.,** *Conservation and Scientific Creativity through Cultures during the Period of Formal Operation*, Ph.D. Psy., RSU, 1980

The major objectives of the study were: (i) to construct and standardize a test of scientific creativity, (ii) to find out the relationship between different components of scientific creativity and the conservation of mass, weight and volume of solid and liquid, and (iii) to find out the difference in the scientific creativity scores and the conservation of substances scores of the various groups stratified in terms of socio-economic status, sex, schooling, age and culture.

A sample of 1,020 students, studying in Classes VI, VII, and VIII in various schools of Raipur and Rajanandgaon districts of Madhya Pradesh, was randomly selected. The first phase dealt with the construction and standardization of the test of scientific creativity. The test measured only six SI factors from twenty-eight enlisted by Guilford, i.e., DMC, DMT, DMU, NMT, CMI and CFR. Four subtests for the test were the consequences test, the unusual uses test, the remote association test and the just-think-why test. The reliability of the test was determined by the test-retest method, which ranged from 0.65 to 0.77 for different subtests. The content, construct, concurrent and factorial validities were established. The concurrent validity against Mehdi's Test of Creativity ranged from 0.56 to 0.69 and the inter-factor correlations among the different dimensions of creativity ranged from 0.95 to 0.99. The second

phase dealt with the correlational aspect of the study. The instruments used by Piagetians for studying solid and liquid as the substances of mass, weight, and volume and the Test of Scientific Creativity (Shukla) were used for this phase.

The findings were: (i) All the indices of relationship between the different dimensions of scientific creativity, namely, fluency, flexibility, originality, and global scores in scientific creativity, and conservation in mass, weight and volume of solid and liquid were found to be significant. (ii) The means of the various dimensions of scientific creativity as well as on the conservation in mass and liquid of the tribal students were invariably lower than those of the urban, rural and refugee Bengali students. (iii) No significant differences were found among the students of different age group, different grade and sex as regards the various dimensions of scientific creativity and conservation in mass, volume and weight of solid and liquid. (iv) On all the dimensions of scientific creativity and conservation in weight of solid and liquid and in mass of liquid, the students of middle socio-economic status scored significantly higher than those of the lower socio-economic status.

**577. SHUKLA, P.,** *Development of Psychological Space Perception in Children*, Ph.D. Psy., All. U., 1973

The primary aim of the study was to find out around what age development of pictorial depth perception begins to take place and to investigate some of the factors associated with better understanding of pictorial cues.

The study was conducted on children of three age groups ranging from three years to six and a half years. The three age groups were three to four years, four to five years and five to six and a half years. Both boys and girls were included in the sample. One hundred and twenty-five children of the desired age ranges were drawn randomly from a government nursery in Allahabad and a nursery in Delhi. They were from the middle socio-economic status families. The CIE Individual Scale of Intelligence (1957) was used. A measure of space perception was developed. It consisted of six subtests, each having five photographic illustrations of pictorial depth cues. The following cues were utilized, linear perspective, relative size, superimposition, texture serial perspective and shading. Apart from these five cues, a group of five photographs depicted multiple cues, i.e., more than one cue was presented on each photograph of the multiple cues subset. The data were

analysed with the help of the Mann-Whitney U test, Kruskal-Wallis one-way analysis of variance, t-test, product moment correlations, rank correlations and partial correlations.

The findings were: (i) Sex differences in pictorial space perception were not found to be statistically significant. (ii) The mean space perception scores of different age groups demonstrated a clear developmental trend. (iii) Intelligence was found to be highly correlated with space perception. The partial correlation revealed that deprivation had deleterious effects on space perception when intelligence was controlled. (iv) No ill-effects of deprivation were found in the lowest age group. Perceptual skill had not developed to any appreciable degree in the lowest age group, but in the two higher age groups the mean space perception scores of the deprived children were significantly lower than the mean scores of the normal children. (v) From the comparison of the mean scores of each subset, it was evident that some of the cues were acquired earlier than the others. In the lower age group scores did not differ but with the increasing age, the children had acquired the necessary skill to utilize some of the cues. (vi) The pattern of cue emergence was more or less similar for the deprived groups and the normal. (vii) Perspective guided children's judgements of big and small even in the youngest age group. But at the same age level, the perspective could not help them in discriminating the far from the near, i.e., distance.

**578. SIDANA, U.R.,** *A Developmental Study of Fears in Children*, Ph.D. Psy.; All. U., 1971

The study aimed at finding out the influence of age, sex, intelligence, the socio-economic status of the family and certain child-rearing practices of parents on the development of fear in children.

The sample consisted of 500 children from five primary schools of Kanpur. The following tools were used for data collection: Fear Checklist, Draw-A-Man Test, Socio-Economic Status Scale and parents' inventory. The means, standard deviation and t-ratios were computed.

The findings of the study were: (i) A statistically significant difference existed between the fear of a six-year-old child and that of an eight-year-old child. (ii) There was a high degree of similarity in the rank order of the most frequent fear responses of the children of the three age groups. (iii) Girls had significantly more fear than boys on the pooled sample. (iv) The low intelligence

group of children had the highest mean fear score as compared to the middle and the high intelligence groups. (v) The children of the lower socio-economic group had higher total mean fear score than the children of the other two groups of socio-economic status. (vi) The fears of the older group were more affected by the parental acceptance and rejection than the fear of the younger group. (vii) The fear of the six-year and the ten-year age groups were affected by the parental reward and punishment.

**579. SIDDAMMA, T.,** *A Study of Behavioural Determinants of Obesity in Children*, Ph.D. Psy., SVU, 1979

The main objectives of the investigation were to study the unique individual variations on the selected behavioural parameters in children as a function of the levels of obesity, determined by using multiple discriminants function analysis and to interpret the results in terms of behaviour model. More specifically, the purposes of the investigation were: (i) to study the personality profiles based on fourteen factors of children's personality questionnaire across the levels of obesity, (ii) to assess how the obese children utilised food salient perceptual cues in visual stimuli, (iii) to study whether the obese children possessed distortions in the perception of their body image, (iv) to determine whether the obese children were relatively more adient than abient on perceptual motoric behaviour, and (v) to find out any significant trend in self-other descriptions of the obese and the non-obese children.

A sample of 318 children (boys and girls) in the age group nine to eleven years, representing the three levels of obesity based on visual assessment of their body size (0 for non-obese, 1 for mildly obese, and 2 for severely obese) constituted the subjects for the study. Every child in the sample was subsequently measured on four anthropometric variables, namely, standing height, body weight, two skin folds (triceps and subscapular), using standard tools and techniques. The other behavioural parameters studied included personality factors, perceptual cue utilization measuring the tachistoscopically exposed visual stimuli, body image index, phenomenological measure of self-other descriptions, adience-abience experimental scale scores and food intake and eating behaviour.

The major findings of the study were: (i) There were unique variations in the measured behavioural characteristics of the obese boys and girls. There existed impor-



tant sex differences across the levels of obesity. (ii) Personality profiles based on fourteen factors of children's personality questionnaire showed some important differences across the levels of obesity. (iii) The obese children were relatively higher in the receptivity of perceptual stimulation than the non-obese children. (iv) There was some evidence in favour of distorted body image in relation to obesity. (v) The self-other description of the obese children differed from that of the non-obese children. (vi) The eating behaviour of the obese children differed from that of the non-obese children.

**580.** SINGH, A.K., *An Empirical Investigation: Some Personality Characteristics of Adolescent Students of Denominational and Non-denominational Institutions*, Ph.D. Psy., BHU, 1980

The major objectives of the investigation were: (i) to find out the differences between the adolescent students of denominational and non-denominational institutions on the personality characteristics of dogmatism, alienation, security-insecurity and manifest anxiety, (ii) to find out the differences between Hindu and Muslim students on the personality characteristics of dogmatism, alienation, security-insecurity and manifest anxiety, and (iii) to find out the differences between boys and girls on the personality characteristics of dogmatism, alienation, security-insecurity and manifest anxiety.

The sample was drawn from the district towns of Varanasi, Jaunpur, Azamgarh and Ghazipur. The total number of subjects was 850, which included 470 from the denominational and 380 from the non-denominational institutions. The tools used were Qamar Hasan's Dogmatism Scale or D-Scale, Dutt and Kureshi's Alienation Scale or A-scale, an adapted version of Maslow's Security-Insecurity Inventory by Ansari, and Sinha's Manifest Anxiety Scale. A  $2 \times 2 \times 2$  factorial design was applied to analyse the data. The results were processed in terms of mean, median, standard deviation, quartile deviation, critical ratio, analysis of variance and Duncan's multiple range test.

The main findings of the study were: (i) When religion and sex factors were kept constant the Muslim students from non-denominational institutions were more dogmatic, more alienated, more insecure and more anxious than the Muslim students from denominational institutions. (ii) Hindu girls from denominational institutions were more dogmatic and more insecure than the non-denominational Hindu girls from non-denominational institutions, but on the other two personality variables

viz., alienation and manifest anxiety, they were similar. (iii) Hindu and Muslim boys of denominational institutions were found to be similar on all the personality variables under study. However, on manifest anxiety the Muslim girls of denominational institutions were higher than the Hindu girls. (iv) The Muslim students (both boys and girls) of non-denominational institutions were found to be more dogmatic, more alienated, more insecure and more anxious than the Hindu students of non-denominational institutions. (v) The Hindu boys and girls of denominational institutions were similar on dogmatism and security-insecurity variables but on alienation and manifest anxiety the boys had higher scores than the girls. (vi) The Muslim boys of denominational institutions were more dogmatic, more alienated, more insecure than the Muslim girls in such institutions. The Muslim boys and girls in denominational institutions did not differ on manifest anxiety. (vii) The Hindu boys of non-denominational institutions were more dogmatic, more alienated, more insecure and more anxious than the Hindu girls of non-denominational institutions. (viii) The Muslim boys of non-denominational institutions were more dogmatic, more alienated and more insecure than the Muslim girls in these institutions, but on manifest anxiety their scores did not differ significantly. (ix) A particular type of institutional atmosphere did not influence the level of personality variables of the Hindu boy students.

**581.** SINGH, B.K., *Personality Factors of the Parents as related to the Sex Role Preferences of the Children*, Ph.D. Psy., Jod. U., 1980

The aims of the study were: (i) to acquire normative data relative to sex-role preference in three, four and five-year old children, (ii) to examine the sex-role preference of boys and girls, (iii) to investigate the differences in sex-role preference between the lower and the upper caste children, and (iv) to examine the role of the personality of parents in the development of sex-role preferences in their children.

Three hundred and twenty-five children of three, four and five years of age were drawn from three schools of Jodhpur. Sex-role preferences were measured by the IT Scale for Children. The personality traits of the parents were studied by using the A.S. Scale and the M-F Scale. All the tests were individually administered. Chi-square, t-test, and analysis of variance were used to analyse the data.

The findings of the investigation were: (i) Clear cut

sex differences in ITSC scores were found. (ii) Five-year old girls were significantly more feminine than three and four-year old girls. (iii) Four and five-year old boys were significantly more masculine than three-year old boys. (iv) The upper caste boys and girls were more conscious of their appropriate sex-role than the lower caste boys and girls. (v) The personality of parents did influence the sex-role preferences of their children. (vi) When fathers were dominant and masculine and mothers were submissive and feminine their boys preferred more masculine role and girls preferred greater feminine role. (vii) When fathers were submissive and feminine and mothers were dominant and masculine their boys preferred less masculine role and girls preferred greater masculine role. (viii) Personality as a variable showed significant effect upon the development of sex-role preference in children.

582. SINGH, E.L., *Superstitiousness: Its Personality Correlates among the College Teachers*, Ph.D. Psy., Nag. U., 1979

The hypotheses of the study were: (i) People differ along the continuum of superstitiousness and degree of superstitiousness they exhibit. (ii) The highly superstitious persons tend to be relatively more maladjusted in various spheres of life than the low superstitious persons. (iii) The highly superstitious persons tend to be more closed-minded and dogmatic than the low superstitious persons. (iv) The highly superstitious persons would be less bright or less intelligent than the low superstitious persons. (v) The highly superstitious persons would be more tense, uncontrolled, emotionally immature and insecure than the low superstitious persons who would tend to be confident, stable, emotionally mature and self-controlled. (vi) The highly superstitious persons would be relatively timid and sensitive, whereas, the low superstitious persons would tend to be adventurous and tough. (vii) The highly superstitious persons would be naive (simple), dependent, casual and conservative while the low superstitious persons would tend to be sophisticated, conscientious, self-sufficient and experimenting.

The sample consisted of 200 college and university teachers, 100 each from the high and the low superstitious groups. The investigator developed his own measure of superstitiousness by deriving the content from the prevalent superstitions around the Nagpur area. The tests used for measuring the selected personality variables for comparison of the high superstitious and the

low superstitious groups were 16 PF Test, Locus of Control Scale, (Rotter) Repression-Sensitization Scale (adapted-Byrane), Dogmatism Scale and Bell's Adjustment Inventory for home, health, social, emotional and occupational areas. One hundred most superstitious and 100 least superstitious persons were isolated from the high and the low extremes of the distribution from the superstitiousness scores of 500 respondents. Data were collected by using the individual testing procedure. The data were analysed by analysis of variance.

The major findings were: (i) The differences between the means of the fourteen personality dimensions were found to be significant. The differences with respect to one dimension (simple vs sophisticated) did not turn out to be significant while that for the dependent-self sufficient dimension was significant. (ii) The high and the low superstitious persons differed significantly, as hypothesized, on all dimensions except one dimension (simple vs sophisticated). (iii) The factor of the superstitiousness interacted with the locus of control factors in respect of emotion vs mature, submissive vs dominance, casual vs conscientious and conservative vs experimenting dimensions. (iv) The factor of superstitiousness interacted with Repression-sensitization factor in respect of the aloof-warm, dependent-self sufficient and the stable-tense dimensions of personality. (v) The conservative vs experimenting dimension was unique in having an interaction of all the three factors, namely, superstitiousness, repression-sensitization and locus of control. (vi) The results of analysis of variance of dogmatism scores showed all the three (superstitiousness, repression — sensitization and locus of control) effects to be significant. The high superstitious persons were more dogmatic ( $M=146.71$ ) than their low superstitious counterparts ( $M=117.25$ ). The repressors tended to be less dogmatic ( $M=127.96$ ) than their sensitizer counterparts ( $M=136.06$ ). (vii) Persons with high and low superstitiousness differed significantly in their home adjustment. (viii) The high superstitious persons displayed poor adjustment in the home, health and social areas and a marginal adjustment in emotional and occupational spheres. The low superstitious persons, on the other hand, seemed to be better adjusted in all the five areas. (ix) The high superstitious persons seemed to be decidedly more dogmatic and closed-minded than their low superstitious counterparts. (x) The difference in the mental level of the high and the low superstitious persons varied for the high and the low age levels; it was more pronounced for persons below the age of thirty-nine than for those who were 39 or above. (xi) An individual's position on the simple-sophisticated dimension

was determined jointly by the level of superstitiousness, sex and age rather than by any single factor independently. (xii) The difference in the high and the low superstitious status of individuals on the stable-tense dimension was more striking for those who were 39 or above than for those below thirty-nine.

**583. SINGH, M.,** *Personality Correlates of Audience Anxiety*, Ph.D. Psy., Jod. U., 1979

The aim of the investigation was to study the personality correlates of audience anxiety. The assumption was that the audience anxious subjects would show impairment in performance before an audience.

Three hundred high school boys of the mean age of sixteen years were selected to perform the task alone and in an audience situation. Some showed marked increase in time before the audience and some showed decrease in time in performing the task. The percentage decrement or increment in time was recorded for each subject. First sixty subjects who showed marked increase in time in completing the task before an audience (more slowing down of performance rate) constituted the audience anxious group. Out of the remaining, sixty subjects were randomly selected to constitute the control group or the non-audience anxiety group. The two groups thus selected were administered the Achievement Motivation (Verbal) Inventory (Prayag Mehta), Non-verbal Group Test of Intelligence (Joshi and Tripathi), Manifest Anxiety Scale (Srivastava and Tiwari), Adjustment Inventory for School Students (Sinha and Singh), Self-concept Inventory (Sharma), Security-Insecurity Inventory (Tiwari and Singh), Junior Personality Inventory (Vidhu Mohan, Singh and Katra), A.S. Reaction Inventory (Allport, Hindi translation) and Nanashya Maps (Frustration test) (Chauhan and Tiwari). Mean, chi-square, t-test and correlation were used to analyse the data.

The findings of the study were: (i) The audience anxious subjects had significantly higher need achievement than the non-audience anxious subjects. (ii) The audience anxious subjects did not differ significantly from the non-audience subjects in intelligence. (iii) The audience anxious subjects had significantly higher manifest anxiety. (iv) The audience anxious subjects did not differ from the non-audience anxious subjects in educational, social and emotional adjustments. None of the groups showed any maladjustment. (v) The audience anxious subjects had significantly higher scores on the ideal self. (vi) The audience anxious subjects had significantly

higher scores on neuroticism and lower scores on extraversion. (vii) The audience anxious subjects had slight insecurity feeling although they fell in the category of tendency to be secure. (viii) The audience anxious subjects were slightly more submissive than the non-anxious ones. (ix) The audience anxious subjects showed significantly higher scores on fixation than the non-anxious subjects. (x) In the non-audience anxious group, mean anxiety was related significantly to intelligence and educational adjustment. In the audience anxious group the ideal and the real self scores were significantly related to n-Ach, intelligence, anxiety and adjustment scores. (xi) The real self and the ideal self were significantly related in audience anxious subjects, but not in the non-audience anxious subjects.

**584. SINGH, M.A.,** *An Experimental Study of the Effect of Cognitive Dissonance on Risk-taking Behaviour in relation to Certain Personality Variables*, Ph.D. Psy., AMU, 1979

The objective of the study was to ascertain the effect of cognitive dissonance on risk-taking behaviour in relation to four personality variables, namely, anxiety, internal-external locus of control, self-esteem and repression sensitization.

The hypotheses formulated were: (i) In a risk-taking situation, there would be a greater tendency to change risk alternative after the arousal of cognitive dissonance than after the non-arousal of cognitive dissonance. (ii) Both highly and mildly anxious subjects will be equally looking for the chance to change risk alternative, whereas under the condition of arousal of cognitive dissonance mildly anxious subjects will show a greater tendency to change risk alternative than highly anxious subjects. (iii) Under the condition of non-arousal of cognitive dissonance both externally-oriented and internally-oriented subjects will equally lack the tendency to change risk alternative whereas under the condition of arousal of cognitive dissonance internally-oriented subjects will show a greater tendency to change risk alternative than externally-oriented subjects. (iv) Under the condition of non-arousal of cognitive dissonance, both the high self-esteem and the low self-esteem subjects will equally lack the tendency to change risk alternative, whereas under the condition of arousal of cognitive dissonance the high self-esteem subjects will show a greater tendency to change risk alternative than the low self-esteem subjects. (v) Under the condition of non-arousal of cognitive dissonance both the repressor and the sen-

sensitizer subjects will equally lack the tendency to change risk alternative, whereas under the condition of arousal of cognitive dissonance the repressor subjects will show a greater tendency to change risk alternative than the sensitizer subjects.

Four samples of 100 subjects each were randomly selected from the male Arts undergraduate students of degree colleges in Imphal. All the subjects came from middle class families and their age ranged from 17 to 20 years. Four different experiments were performed in order to determine the effect of cognitive dissonance on risk-taking behaviour in relation to each one of the four personality variables separately. With two values of cognitive dissonance, arousal and non-arousal and two values of each of the personality variables, high and low, a 2×2 factorial design was used. The four personality variables, namely, anxiety, internal-external locus of control, repression sensitization, and self-esteem were measured by Self Analysis Form (Sinha,) the I-E Scale (Rotter), Indian Adaptation of Byrne's R-5 Scale (Prasad) and self-ideal self-discrepancy on a Trait Adjectives Rating Scale, respectively. The data were analysed using analysis of variance.

The findings were: (i) The condition of arousal of cognitive dissonance led to more changes of risk strategy than the condition of non-arousal of cognitive dissonance. (ii) The non-arousal of cognitive dissonance led to a tendency to repeat a risk strategy on the part of the mildly anxious and highly anxious subjects, the internally-oriented and externally-oriented subjects, the high self-esteem and the low self-esteem subjects, and also on the part of the repressor and sensitizer subjects. (iii) In the condition of arousal of cognitive dissonance, on the other hand, the mildly anxious subjects, the internally-oriented subjects, the high self-esteem subjects and the repressor subjects showed significantly more changes of risk strategy than their respective counterparts in the high score groups.

585. SINGH, O.P., *A Study of Creativity in High School Students in relation to Intelligence and Socio-economic Status*, Ph.D. Edu., Avadh U., 1982

The investigation aimed at the study of relationship between creativity, intelligence and socio-economic status. The sample for the study consisted of 400 rural and 400 urban high school students drawn from sixteen intermediate colleges in Varanasi and Faizabad divisions. Joshi's Test of Mental Ability was used for the as-

essment of intelligence; Baqer Mehdi's Test was used for the measurement of creativity and information about socio-economic status of the family was collected with the help of a questionnaire. The mean intelligence test scores, the mean creativity scores as well as the standard deviations for the different groups were calculated and critical ratios worked out to test the significance of the differences between means for the different groups.

The main findings of the study were: (i) The mean intelligence score of the urban students was significantly higher than that of the rural students. (ii) The mean intelligence test score of the science students was significantly higher than that of the arts students. (iii) In general, the socio-economic status of the urban students was higher than that of the students from rural areas. (iv) The mean creativity score of the urban students was higher than that of the students from rural areas. (v) The mean creativity score of science students was higher than that of arts students.

586. SINGH, R., *Children's Judgment of Personal Happiness*, IIM, Ahmedabad, 1982 (NCERT-financed)

The major purpose of the research was to study how children of 4 to 9 years of age expressed their immediate happiness. There were four experiments involving 72, 144, 48 and 48 subjects, respectively.

Two experimental tasks were employed. Task 1 consisted of factorial combinations of verbal and concrete reinforcements. Children performed on a sample motor task and received one of the several combination of verbal reinforcements and a balloon. They gave self-judgments of their happiness along a 15-face scale. In Task 2, serial positions of positive and negative verbal reinforcements were manipulated. The subjects indicated their cumulative happiness from three verbal remarks. In accordance with the information integration theory, it was expected that the verbal and concrete reinforcements of Task 1 and the verbal reinforcements of the different serial positions would be averaged in expression of personal happiness.

The findings of the study were: (i) Happiness followed an averaging rule. (ii) Children's judgments were characterized by recency effect. (iii) Children between four and nine years of age had a well-developed metric sense. (iv) Children of four to nine years of age were equally good in decentering to the multiple aspects of the reinforcing situations.

587. SINGH, R.P., *A Study of Creativity in relation to Adjustment, Frustration and Level of Aspiration*, Ph.D. Edu., Agra U., 1979

The objectives of the investigation were: (i) to find out the nature and extent of the relationship between creativity and adjustment, creativity and frustration-reactions and creativity and the level of aspiration, (ii) to find out the extent to which the high and the low creative students differed in respect of adjustment, frustration-reactions and the level of aspirations, and (iii) to study the prediction of creativity, i.e., to establish regression equations between creativity as criterion and adjustment, frustration-reactions and the level of aspiration as predictors.

The tools used were the Test of Creative Thinking by Mehdi, Adjustment Inventory for School Children by Sinha and Singh, Frustration Test by Chauhan and Tiwari, and level of Aspiration Test by Shah and Bhargava. The random sampling procedure was used to select 600 male students of Classes IX and X from literary and scientific groups of the secondary schools of Agra City. Statistical techniques used included t-test, product moment correlation, and multiple regression analysis.

The major findings were: (i) Creativity was found to be positively and significantly related to total, social and educational adjustments at 0.05 level. But creativity was not found to be significantly related to emotional adjustment. (ii) No significant relationship was found between creativity and frustration-reactions, i.e., regression, fixation, resignation and aggression. (iii) No significant relationship was found between creativity and the level of aspiration. (iv) The high and the low creative students were found to differ significantly in their total emotional and educational adjustments at 0.05 level. But they were not found to differ significantly in their social adjustment. (v) The high and the low creative students were not found to differ significantly in their regression, fixation and resignation, but were found to differ significantly at 0.05 level, in their aggression. (vi) The high and the low creative students were not found to differ significantly in their level of aspiration. (vii) All the predictors, i.e., adjustment, frustration-reactions and the level of aspiration were not found to influence creativity in the same manner. The role of adjustment, aggression and the level of aspiration was positive in nature but dissimilar in numerical weights. The role of regression, fixation and resignation was found to be negative in nature but dissimilar in numerical weights. (viii) The value of multiple regression coefficient between creativity and adjust-

ment, aggression and the level of aspiration was found to be significant at 0.05 level, while the other coefficients were not found to be significant.

588. SINGH, R.S., *Personality Variables (Traits and Needs) and Demographic Correlates (Sex, Area and Socio-economic Status) of Anxiety Level among College Students*, Ph.D. Psy., Agra U., 1980

The investigation attempted to analyse anxiety in relation to other traits and needs of the individuals as well as certain demographic factors. The objectives were: (i) to study the behavioural disposition which causes individual difference in the tendency to perceive a wide range of stimulus situations as dangerous or threatening and to respond to these with anxiety state reaction, and (ii) to study the relationship between anxiety and related antecedent demographic factors. The following hypotheses were formulated: (i) There will be consistent relationship, positive or negative, between anxiety and different psychogenic needs and the high, medium and low anxiety groups will show significant differences with respect to these needs. (ii) There will be consistent personality traits. Furthermore, the high, medium and low anxiety groups will differ significantly with respect to these personality dimensions. (iii) There will be significant sex differences in anxiety and the direction of these differences will depend upon the interaction of sex with other demographic variables. (iv) Urban college students will be more conscious than rural college students and these differences will, at least in part, be determined by the interactions of area with other population variables. (v) There will be an inverse relationship between anxiety and socio-economic status and the relationship will depend upon the interaction SES with area and sex.

The study was conducted on two samples of 180 male college students from Gorakhpur (for personality correlates) and of 360 subjects for demographic variables. A  $2 \times 2 \times 3$  factorial design was used. The tools used were Comprehensive Anxiety Test (Sinha), 16 PF Questionnaire, Personal Preference Schedule (Tripathi), SES Scale, Forms A and B (Kulshrestha). The researcher used means, standard deviations, coefficient of correlation, Duncan's range test, analysis of variance and appropriate graphical methods to analyse the data.

The findings were: (i) Anxiety was positively related with ergic tension. (ii) The correlation between anxiety and ego-strength, as well as anxiety and temperamental threctia was negative. (iii) There was no relation bet-

ween anxiety and intelligence. (iv) There was significant positive correlation between anxiety and need abasement and anxiety and nurturance. (v) There was negative relationship between anxiety and n-difference and anxiety and n-endurance. (vi) Anxiety has low negative correlation with need achievement. (vii) The correlation between anxiety and n-affiliation showed that the two were unrelated. (viii) None of the three demographic variables, i.e., sex, area, and SES, alone has any effect on anxiety. (ix) The interaction between sex and area played a significant role in the development of anxiety. (x) Socio-economic status differences resulted in difference in the anxiety level of the middle class and the lower class boys, the former having more anxieties.

**589.** SINGH, V., *Anxiety and Need Achievement in relation Tester's Set*, Ph.D. Psy., Agra U., 1981

The objective of the study was to replicate Rosenthal's finding that the expectancy held by an experimenter could introduce experimenter's bias into the experimental situation such that the expectancy is confirmed. It was hypothesized that : (i) the subjects who were randomly assigned to one of the two groups of Es who held different expectancies would perform on an ambiguous photo rating task in such a way as to yield data in accord with their E's hypothesis, (ii) those subjects who were made to feel that their experimental responses might be utilized by the experimenter to evaluate certain areas of their self-structure would show a significantly higher incidence of conforming to the covert expectancy indicating cues being emitted by the experimenter than would the subjects who felt their responses, while being helpful to the scientific goals of the experimenter, would not serve as data for personal evaluation, (iii) the subjects having high need achievement scores would show significantly higher expectancy effect than the subjects having low need achievement scores, and (iv) the subjects having high anxiety scores would show significantly higher expectancy effect than the subjects having low anxiety scores.

It was an experimental research on 120 subjects (60 males and 60 females) of the intermediate class. The experimenters were twelve intermediate school teachers having knowledge of psychology. They were the subjects of the investigators. Experimenters' expectancy (E-E) effect was demonstrated in the specified manner. It was produced by having some of the Es read a sheet of paper which stated that they would expect their Ss to be success perceivers who would give an average rating of five,

while the remaining Es were let to believe that their Ss had been selected as failure perceivers and would therefore give an average rating of -5. There was no prior information available on how the subjects would rate the photos and the subjects were assigned to one of the two groups of Es in an essentially random manner. On a null hypothesis, the performance of the two groups would be expected to be quite similar since they were taken from the same population and were given identical treatment; however, it was predicted that the two groups of subjects would demonstrate significantly different performance on the photo rating task with Ss in each group tending to confirm the expectancies held by their Es. Evaluation Apprehension (EA) was aroused among the subjects by giving them different descriptions of the purpose of the experiment. Half of the Ss in both the expectancy groups were given a description which was designed to make them highly concerned with their performance by establishing the expectation that on the basis of their performance the E would be able to judge whether the subject was psychologically normal or pathological. The remaining Ss in each expectancy group read the description which attempted to make them relatively unconcerned with their performance. The tools used were a questionnaire, General Anxiety Scale and TAT. The T-test and correlation coefficients were used for data analysis.

The main findings of the investigation were: (i) The direction of the confirmation of expectancy (set) effect was the same as that held by the experimenters of both the groups. (ii) The subjects who were in the high EA group confirmed the expectancy hypothesis held by the experimenter while the subjects in the low EA group did not confirm the hypothesis held by the experimenter. (iii) The subjects having high need achievement scores showed higher expectancy effect than those having low need achievement scores. (iv) The subjects having high anxiety scores showed higher experimenter's effect confirmation than those who had low anxiety scores.

**590.** SINGH, Y., *An Examination of Personality Assessment of Mentally Superior and Average Children*, Dept. of Psychology, John's College, Agra, 1978

The study aimed at analysing the personality adjustment of superior and average school-going children. The sample comprised twenty male students, of whom ten were superior and ten average, selected out of all the children of Classes VIII, IX and X of a secondary school

of Agra. The tools used were Prayag Mehta's Group Verbal Intelligence Test, Lal's Personality Inventory measuring adjustment in five areas—home, school, health, social, and emotional, Incomplete Sentence Blank of Rotter and Rotter (Hindi version) measuring attitudes in general, familial, social, sexual character areas and Teachers' Rating and Parents' Rating for emotional maturity in the children. Kolmogorov-Smirnov two sample test was used to test the significance of differences.

The major findings were: (i) The superior children did not differ from the average children in the case of home, school, health, social and emotional adjustment. (ii) The average group showed a significantly better adjustment on character trait of personality than the superior group. (iii) No significant differences were observed in the case of teachers' ratings of children for emotional maturity but, according to parents, the superior children were more emotionally mature than the average children.

**591. SINGHAULAKH, S.P.,** *Student Motivation to Work*, Ph.D. Edu., Raj. U., 1979

The study aimed at devising a separate test to measure student motivation to school work. The objectives were: (i) to identify the factors which influenced student's motivation, (ii) to study the motivational levels of the students with regard to their work, (iii) to study the motivational levels of the students studying in government and non-government schools, and (iv) to make a comparative study of the motivational levels of boys and girls, rural and urban and students of Classes IX and X.

The sample consisted of 500 boys and 500 girls of Classes IX and X selected from thirty higher secondary schools of Bikaner, Ganganagar and Churu districts of Rajasthan. A test of students' motivation to work was constructed. The investigator approached 100 teachers of secondary schools and asked them to state the work they expected from the students relating to the five fields, namely, the field of classroom learning (CL), co-curricular activities (CC), discipline (Ds), guidance and evaluation (GE) and extra work (EW). After getting the work expected from the students, the investigator approached thirty judges. For the preparation of responses, the investigator approached 300 students of Classes IX and X studying in the sampled schools. They were asked to write what they would do or how they would behave if the teachers asked them to do so. After getting responses from 300 students, the responses were put under five categories, namely, highly motivated,

motivated, undecided, unmotivated and highly unmotivated. These categorized responses were sent to 300 judges, and they were asked to pile up these responses (in a rank order) under the five categories, namely, highly motivated, motivated, undecided, unmotivated and highly unmotivated. On the basis of grading, 15 statements were taken for the field of classroom learning, 12 for co-curricular activities, 11 for the field of discipline, 9 for the field of guidance and evaluation and 3 for the field of extra work. The statements were taken according to the ranks. The first part included 50 items and second part included 105 items. The second part was administered to 400 students of Classes IX and X studying in various secondary and higher secondary schools of the Bikaner division of Rajasthan. The discriminating value of each item was calculated on the basis of the responses of the high and the low scoring groups to each response category. Finally, 20 items were selected for the questionnaire and 30 items for the inventory. The questionnaire consisted of six items from the field of classroom learning, five from the field of guidance and evaluation and one from the field of extra work. Similarly, the second part consisted of nine items from the field of classroom learning, seven from the field of co-curricular activities, five from the field of discipline, six from the field of guidance and evaluation and two from the field of extra work. The test-retest method was used to find out the reliability. The coefficient of reliability of the test was found to be 0.71 which was high and significant. The coefficient of contingency with the five categories were 0.66, which was high and significant.

The findings of the study were: (i) There was no significant differences between rural and urban schools with regard to motivation among students. (ii) There was no significant difference among students of Classes IX and X with regard to motivation. (iii) Motivation was found to have a significant relationship with better performance and achievement.

**592. SINHA, A.K. and BHAN, R.N.,** *Mental Health in University Students*, Dept. of Phil., Kur. U., 1978 (ICSSR-financed)

The main objective of the research was to assess the mental health of university students and to find out its psycho-social dynamics.

The sample consisted of 259 male and 118 female students of Kurukshetra University and 293 male engineering students. The students were administered the Maslow Security-Insecurity Inventory. On the basis of their

scores, the students were divided into two groups; those who were below third decile were labelled as insecure and those who were above the seventh decile were taken as secure. These two extreme groups were administered the Thematic Apperception Test and the Crown and Crisp Middlesex Hospital Questionnaire. After the administration of the tests the sample subjects were interviewed through a structured interview schedule regarding the family background, socio-cultural background, inter-personal relations, mode of expenses, involvement in the problems of sex, interest in academic problems, aspiration level and vocational preferences and life view. The data so collected were analysed with the help of t-test.

The findings of the study were: (i) The engineering boys were significantly superior in mental health to the university boys. (ii) The boys and the girls of the university did not differ on emotional security. (iii) The Humanities and social science students also did not differ on emotional security. (iv) The natural science group was comparatively more emotionally secure than the humanities and social science group. However, the natural science group did not differ from the professional course group. (v) Emotionally insecure group suffered from neurotic symptoms and syndromes in a greater degree than the emotionally secure group. (vi) Those with secure emotional health ascribed positive characteristics to the central figure in the stories. (vii) The positive mode of the central figure as an important aspect of interpersonal situation was concomitant with emotionally secure mental health. (viii) Specific relationships used in the stories were independent of security-insecurity variable. (ix) The reactions of the central figure to superiors and subordinates were independent of emotional security-insecurity. (x) The withdrawal reaction characterized defence mechanism of insecure persons to defend themselves from disintegration when faced by stressful situation. (xi) Secure and insecure persons were equally distributed among planned and unplanned families. (xii) Emotional security-insecurity developed among siblings irrespective of their ordinal position. (xiii) Emotional insecurity was more prominent among children from the agricultural community. (xiv) Emotional security-insecurity was evenly spread among children from the business community and the service community. (xv) The democratic, permissive and rational home atmosphere assessed by the recognition and acceptance of opinion of the children was a potent factor behind emotional security. (xvi) Stressful situations and emotional insecurity were concomitant variables. (xvii) The favourable interactions with neighbourhood and

frustrating interactions with neighbourhood were concomitant with secure and insecure emotional health, respectively. (xviii) Jealous and quarrelsome neighbourhood developed emotional insecurity among individuals. (xix) The two groups did not differ in their attitude towards their respective institutions, friends, the habit of spending on entertainment and seeing movies, the habit of smoking or using stimulant drugs, etc. (xx) The insecure group had more sex problems and vagueness in making any unique contribution to their professions and their lives were less meaningful. (xxi) The two groups did not differ on sociability. (xxii) The secure subjects were significantly superior to the insecure persons regarding conceptual integration, ego-strength and aspiration level. (xxiii) Both the groups, secure and insecure, were equally cooperative in giving information about themselves to the interviewer.

**593. SRIVASTAVA, A.K.**, *Self-esteem during Adolescence as a Function of Creativity Components, Personality Adjustment and Values*, Ph.D. Psy., Agra U., 1981

The research attempted to study adolescent's self-esteem with reference to four components of creativity, seven types of values and personality adjustment. It tried: (i) to find out how far personality adjustment, values and creativity components determine the self-esteem during adolescence, (ii) to find out the role of the creativity, personality adjustment and value patterns on adolescents' personally perceived self and socially perceived self separately as well as simultaneously, and (iii) to study the first order interactions and the second order interactions of the three aforesaid variables while they influenced adolescents' self-esteem.

The investigation was an *ex post facto* correlational research dealing with three independent variables, viz., creativity components (four components having two levels), personality adjustment (three levels) and values (seven types of value each having two levels) and the dependent variable self-esteem (personally perceived self and socially perceived self). The control of subjects, situation and sequence had been done mainly by randomization and controlling techniques. The universe of the study consisted of boys and girls studying in intermediate and degree colleges (age group 15-20 years) of Kanpur city. The sample comprised 800 students equally divided between intermediate and degree classes (400 each) and between two sexes (400 boys and 400 girls) from the middle socio-economic status. The tools of



measurement used were creativity test, adjustment inventory and value test. The levels of independent variables were obtained by following the extreme group technique. By following this technique 360 subjects were systematically drawn as per requirement of  $2 \times 2 \times 3$  cells (thirty in each cell). For analysis F-test, t-test and Duncan's Range Test were used.

The findings related to personality perceived self and socially perceived self were: (i) Originality played an important role in personally perceived self of adolescents in comparison to other components of creativity whereas creativity production did so in socially perceived self of adolescents. The assessment of the outer world in original manner promoted personally perceived self whereas the power of creative production promoted socially perceived self. (ii) Out of the seven values, high theoretical and religious values promoted personally perceived self whereas high political, social values, demoted personally perceived self. High theoretical, aesthetic and moral values promoted socially perceived self whereas high economic, social and religious values demoted socially perceived self. Adolescents having positive self-esteem tended to have more theoretical and aesthetic values whereas high self-esteem was found to be associated with high theoretical, aesthetic and moral values. (iii) Most of the experiments on adjustments indicated that an increase in the level of adjustment of adolescents led to positive self-esteem whereas deterioration in adjustment led to negative self-esteem. (iv) The high creative production promoted personally perceived self when adjustment was moderate but low creative production did so when adjustment was high but for the promotion of socially perceived self high creative production was essential when adjustment was high. Creative production was found to have a significant impact on socially perceived self but not on personally perceived self. (v) A clear-cut role of values and the components of creativity in the development of self-esteem was noticeable.

594. SRIVASTAVA, B., *A Study of Creativity in relation to Personality Factors, Birth Order and Linguistic Ability among the High School Students*, Ph.D. Edu., Avadh U., 1982

The aim of the study was to find out the relationship of creativity with personality factors, birth order and linguistic ability among high school students. The sample for the study consisted of 365 male and 455 female high school students.

Cattell's High School Personality Questionnaire was used for the assessment of personality factors. Passi's Verbal and Non-Verbal Test of Creativity was used to have an idea about creativity among the students. Information about the knowledge of languages was collected through a questionnaire.

The main findings of the study were: (i) There was positive relationship between the scores on creativity and the scores on different personality factors. (ii) The first-born children had higher creativity scores than the later-born children. (iii) Students knowing three languages were more creative than those knowing only one or two languages. (iv) Boys were more creative than girls. (v) There were no significant differences among the Hindu and the Muslim students as regards creativity. (vi) The socio-economic status of the family had positive relationship with creativity.

595. SRIVASTAVA, K.D., *Personality Study of U.P. Higher Secondary Students of 17 Plus as Reflected in Rorschach Test*, Ph.D. Psy., Luc. U., 1971

The objectives of the investigation were: (i) to explore personality patterns of 17-year-old adolescents in the context of social psychological forces operative in the cultural milieu, (ii) to verify certain hypothetical constructs having direct bearing on Rorschach Test, and (iii) to provide statistical compendium of norms as frame of reference to Indian researchers, statisticians and educationists.

The multi-stage stratified random sampling technique was utilized to select a sample of 224 students studying in either Standard XI or Standard XII in the age group 17 to 17 years 11 months. Of these, 112 were boys and 112 were girls. Half of the boys' sample and half of the girls' sample had an urban background. The researcher used Rorschach Test and the Hindi adaptation of Stanford Binet Test for collecting data.

The major findings of the study were: (i) Indian adolescents of seventeen years were not too far off in their personality make-up as compared to Indian adults. (ii) Indian Adolescents were far less maniac and puzzled as compared to their counterparts abroad. (iii) Girls fared better than boys, intellectually. (iv) Girls adopted short-cut methods rather than going the long way. Boys preferred a long course, and integrated view, confirming steadfastness and greater resilience with regard to mental output. (v) Archaic impulses played a major role in the life of boys. Girls were still better caretakers of traditions and mores of Indian society. (vi) Girls had com-

paratively better developed time sense and greater sensitivity and responsiveness. Girls were more suggestible as well as yielding by nature. (vii) Rural adolescents were potentially more intelligent than urbanites but lagged behind in the practical sense of functional use of their potential. (viii) The sample having high intelligence was capable of more global, detailed and rich imagery and enthusiasm to grapple with the complexities in life to utilize the available resources and exploit new frontiers as well. The sample having low intelligence was inferior on all these counts. (ix) The higher socio-economic group was found favouring a global intellectual approach and took risks to adopt novel methods. This was not the case with the middle class group. (x) Boys were found to focus on concrete facts/objects. (xi) Boys were not inclined to cling to values in a conventional way. (xii) A rebellion in boys against authority was noticeable in rowdy activities, strikes, etc. (xiii) Girls epitomized large-heartedness, catholicity, kindness and tenderness. (xiv) Girls were sentimental and sacrificing and hesitant to react to novelties as often as boys.

**596.** SRIVASTAVA, N.K., *A Psychological Study of the Development of Moral Ideas among University Students*, Ph.D. Psy., Kashi Vidyapeeth, Varanasi, 1981

The main objectives of the investigation were: (i) to study the developmental trends of moral ideas among university students, (ii) to study the effects of education on moral development, (iii) to study the effect of age on moral development, and (iv) to study sex differences in moral development.

A sample of 566 students of Banaras Hindu University, 326 of Kashi Vidyapeeth and 350 of Sampurnanand Sanskrit University was drawn. The subjects were students of P.U.C., B.A. and M.A. classes of these universities. The age range of the students selected for the sample was 15 years to 28 years. The sex-wise break-up of the sample was 690 males and 552 females. The moral ideas of values of the subjects were measured with the help of two rating scales developed by the investigator, one consisting of 80 items for moral actions and other consisting of 80 items for immoral actions. The data were analysed mainly on the basis of the t-test.

The main findings were: (i) For every increase on the educational ladder there was corresponding decrease in moral values. (ii) After the high school education, with the increase in age there was decrease in the magnitude of moral values. (iii) Female university students were

significantly higher on morality score than their male counterparts.

**597.** SRIVASTAVA, P., *A Comparative Study of Radicalism versus Conservatism Traits among Adolescent Boys and Girls of Intermediate Colleges of Lucknow*, Ph.D. Edu., Avadh U., 1981

The main objective of the study was to find out how far the students in the intermediate colleges were radical or conservative in their attitude towards some vital personal, social and religious questions concerning the Indian society. It also tried to see if there were any differences among the radical and the conservative students as regards socio-economic backgrounds, sex and personality characteristics.

Data regarding radical and conservative attitudes were collected with the help of Duney's Radical-Conservative Attitude Scale. The sample consisted of 391 boys and 401 girls drawn from nine boys' and nine girls' institutions of Lucknow. Analysis of the scores on the attitude scale showed that among the boys 108 could be regarded as radical and 95 as conservative. Among the girls 100 were radical and 104 conservative. Out of these, 50 radical and 50 conservative boys, and 50 radical and 50 conservative girls were selected randomly. Data relating to socio-economic background and personality variables were collected with the help of a questionnaire and Cattell's HSPQ.

The main findings of the study were: (i) Girls were more radical than boys. (ii) More conservative boys and girls came from joint families. (iii) The majority of the radical boys and girls belonged to urban areas. (iv) The majority of the conservative boys and girls belonged to rural areas. (v) The majority of the radical boys and girls came from higher income groups. (vi) The radical boys were more warm-hearted, more intelligent and more self-sufficient than the conservative boys. (vii) The conservative boys were restless and excited. They were more reserved, less intelligent and less self-sufficient. (viii) The radical girls were more intelligent and had greater ego strength, dominance, surgency and frustration. (ix) The conservative girls were more sober, more lax, more toughminded and less individualistic.

**598.** SRIVASTAVA, R.K. and SAXENA, V., *Personality Correlates of Self-rated Academic Success and Failure—a Comparative Study*, Dept. of Psy., P. P. N. College, Kanpur, 1979

The major aim of the investigation was to study the personality characteristics of Indian students who rated themselves as academically successful and unsuccessful. The sample comprised 200 male students, of whom 110 were academically successful and 90 academically unsuccessful, from the graduate classes in arts of two degree colleges affiliated to Kanpur University. The research tool used was Cattell and Eber's Sixteen Personality Factor Questionnaire — Form A as adapted in Hindi by Kapoor. The criterion of academic success was based on the response to the question: Do you regard yourself as an academically successful student? The F-test was used to test the differences between the mean scores.

The major findings of the study were: (i) Students who had rated themselves as academically successful scored differently from those who had rated themselves as academically unsuccessful on two second order personality factors, namely, adjustment vs anxiety and introversion vs extraversion. (ii) The academically successful and unsuccessful students did not differ on two other second order factors — tenderminded emotionally vs alert poise and subduedness vs independence. (iii) Academically successful students were significantly lower on anxiety factor than unsuccessful students. (iv) Academically successful students were more extravert than academically unsuccessful students.

**599.** SRIVASTAVA, R.N.L., *A Study of Development of Aesthetic Sense in the Higher Secondary School Students of Varanasi District*, Ph.D. Edu., Gor. U., 1982

The objectives of the study were: (i) to find out whether students of higher classes were more appreciative of beauty than those of lower classes, (ii) to examine whether girls and boys had a similar ability of appreciating beauty, (iii) to find out whether students from rural and urban institutions differed in their sensitivity towards beauty and (iv) to ascertain whether aesthetic sense could be developed by providing better conditions.

The Aesthetic Sense Scale, which measured aesthetic sense in five aesthetic areas, viz., Hindi, English, music, Sanskrit and art, was developed by the investigator and was administered to 400 girls and 400 boys of Classes IX and XI both from rural and urban secondary schools of Varanasi district.

The findings of the study were: (i) The boys of eleventh class showed an increased aesthetic apprecia-

tion than the boys of the ninth class; similarly, the girls of the eleventh class were superior to those of the ninth class. (ii) Aesthetic development was affected by the class of study and locality too. (iii) The boys of either class had greater appreciation than the girl students. (iv) Development was found to have taken place for all the subjects of different aesthetic areas. However, Hindi dominated all the areas in this regard.

**600.** SRIVASTAVA, S.N., *A Comparative Study of Two Techniques of Behaviour Modification in Reducing Examination Anxiety*, Ph.D. Psy., Kashi Vidyapeeth, Varanasi, 1981

The investigation was concerned with a comparative study of two techniques of behaviour modification for reducing examination anxiety among students. The two techniques were group relaxation method (along the lines of Jacobson) and self-desensitization procedure (modified desensitization in the framework of Kanfer's beta-regulation).

The specific areas of the study were listed in the form of two hypotheses. Initially, the sample consisted of 400 undergraduate students. The final study was conducted on 25 per cent of the high scores (N = 100) on the examination anxiety test. These one hundred subjects were randomly divided into three equivalent groups. Two groups served as experimental groups for treatment through two selected therapeutic techniques and the third group as the control one. A pretest-posttest control group design was followed. The tools used in the study were Examination Anxiety Test and a ten-point rating scale for measuring the anxiety level after each session of the treatment. Experimental Group I was instructed to systematically tense and relax various muscle groups. In each exercise ten seconds of tensing were followed by ten to fifteen seconds of relaxation. In all, this group had seven sessions of relaxation programme batch-wise preceded by three training sessions. Experimental Group II was instructed to imagine anxiety producing hierarchy items one by one, and self-desensitization was used as a self-control procedure. Clients were trained to relax and desensitize on their own with minimal presence of therapists. They were further instructed to use self-monitoring, self-evaluation and self-reinforcement and to maintain a daily record of their anxiety and improvement.

The main findings were: (i) The two experimental groups showed significant reduction in examination anxiety scores whereas the control group gave evidence of

significant increase in the mean examination anxiety score. (ii) The self-desensitization procedure was a significantly superior technique for reducing examination anxiety in comparison to the group relaxation method.

**601.** SUJATHARANI, R., *A Study of the Relationship of Masculinity-Femininity Trait in Adolescents to Their Patterns and Academic Achievement*, Ph.D. Edu., Ker. U., 1981

The major aim of the study was to relate the masculinity-femininity in adolescents to their adjustment patterns at home, school and community and academic achievement. The main hypotheses examined were: (i) Masculinity-femininity was a dimension of personality which differentiated adolescents into groups. (ii) Certain demographic and environmental variables influenced the masculinity-femininity in adolescents. (iii) Masculinity-femininity was related to home, school and community adjustment and academic achievement. (iv) There was sex differentiation in the relationship between the masculinity-femininity trait among adolescents and their adjustment patterns and academic achievement.

The sample for the study was drawn from Trivandrum education district. It consisted of 1,164 adolescent boys and girls studying in Class X in twelve schools of the district. The tools used for data collection were the Masculinity-Femininity Scale, Adjustment Scale to measure adjustment at home, school and community, a questionnaire to collect the personal data and achievement indices. The statistical techniques used were descriptive statistics, t-test, product moment correlation, and partial correlation.

The major findings were: (i) Masculinity scores were low. Age was not found to influence the masculinity-femininity scores. Religion did not appear to influence the masculinity-femininity trait but economic status and sibling relationship influenced the masculinity-femininity trait. (ii) The family size appeared to be an important factor influencing the masculinity-femininity trait. (iii) Empathy was identified as a feminine trait. Girls possessed significantly higher empathy than boys. (iv) There was significant relationship between sibling relationship and empathic ability. An only child possessed highest empathic ability. (v) Adolescents belonging to small families possessed higher empathic ability. (vi) Superiority was identified as a masculinity trait. The trait of superiority was found to be related to economic status. (vii) Courage was identified as a masculinity trait

having relationship with economic status, the type of family and the size of family. (viii) Sociability was identified as a masculinity trait having relationship with economic status. There was significant relationship between economic status and interest in masculinity literature. Mechanical-mindedness was related to age and religion. Boys were interested in masculinity jobs as compared to girls. Vocational interest was more significantly related to economic status, religion and presence of both the parents. Home adjustment of boys was higher than that of girls. (ix) Adolescent boys belonging to high economic status were better adjusted at home than girls. (x) School adjustment of adolescents below the age of sixteen was higher than that of their older counterparts. (xi) Adjustment with the community was higher in the case of boys than in the case of girls. Community adjustment was not influenced by age, religion and economic status. (xii) Academic achievement of boys was higher than that of girls. Adolescents belonging to higher economic status had better achievement than those belonging to lower economic status. (xiii) Achievement was not influenced by religion, sex and the type of family. (xiv) Academic achievement was positively related to the masculinity-femininity trait. The relationship between masculinity-femininity and achievement was not influenced by adjustment.

**602.** SUMBALI, K., *A Study of Aggression among Children and Adolescents*, Ph.D. Edu., Jammu U., 1981

The objectives of the study were: (i) to identify aggressive and normal students, both boys and girls on the basis of operational definition, from the population of students of Class VIII and adolescents of colleges. (ii) to compare the quantum of aggression exhibited by aggressive boys and girls and aggressive children and adolescents, and (iii) to examine the degree of relationship between aggressive and normal students with regard to some selected variables.

The identification of aggressive and normal students was based on the scores obtained by the respondents on the students' identification questionnaire, the teachers' identification questionnaire and four scoring factors of Rosenzweig P-F study (Hindi version). The tests/questionnaires administered to 1,148 boys and 1,023 girls of Class VIII and 562 boys and 549 girls of TDC Part I, from various schools and colleges of Jammu city. The total weighted scores thus obtained comprised the composite aggression scores. The normal students com-

prised seventy-five boys and girls with composite scores immediately above the mean and an equal number below the mean. The aggressive subjects comprised fifty boys and fifty girls with highest composite aggression scores. The normal and aggressive subjects thus selected were administered a group test for intelligence, Thematic Apperception Test, Security-Insecurity Inventory (Maslow), Adjustment Inventory (Saxena), Sheldon's typology questionnaires, questionnaires for family relationship, teacher-pupil relationship and peer relationship to obtain measures of fifteen different variables for comparing the normal and the aggressive subjects.

The main findings of the study were: (i) Boys were more aggressive than girls. (ii) Children were more prone to aggressive behaviour than their senior counterparts. (iii) Aggressive subjects were less intelligent than the normal. (iv) Children and adolescents from lower economic groups were more aggressive than the ones from higher economic groups. (v) Aggressive subjects had poor family relationships. (vi) Aggressive subjects showed poor home, emotional and school/college adjustment at the adolescent level only. (vii) Aggressive subjects possessed better health adjustments than the normal. (viii) The aggressive and the normal subjects were equally adjusted, socially. (ix) Aggressive subjects at the adolescent level were found to belong to families with relatively low educational cultural level. (x) Aggressive subjects showed poor teacher-pupil relationship only in the case of adolescents. (xi) Aggressive subjects had higher need for power than the normal. (xii) Aggression was found independent of Sheldon's personality types. (xiii) Aggressive subjects had poor relations with their siblings as compared to the normal.

**603.** TALWAR, S.K., *A Comparative Study of Some Personality Characteristics, Adjustment Level and Attitude towards Physical Education of Sportswomen and Non-sportswomen at College Level*, Ph.D. Phy. Edu., Kur. U., 1981

The major objectives of the study were: (i) to compare the sportswomen and non-sportswomen on Cattell's sixteen personality factors, (ii) to compare the adjustment patterns of sportswomen and non-sportswomen, (iii) to compare the attitude towards physical education of sportswomen and non-sportswomen, and (iv) to find out such factors as were implicit in the characteristics of sportswomen as well as of non-sportswomen.

The preliminary sample consisted of 200 sportswomen and 200 non-sportswomen. Sportswomen were selected

using purposive sampling from among women who had played different games at inter-college or inter-university tournaments. The sample of non-sportswomen was randomly selected from the same colleges. The two groups were later matched on scores on general mental ability and socio-economic status. The final sample comprised 150 sportswomen and 150 non-sportswomen. They were administered the personal information proforma, Group Test of General Mental Ability (Jalota), Socio-Economic Status Scale, 16 P.F. Questionnaire, Bell Adjustment Inventory and Adam's Physical Education Attitude Scale. The data so collected were analysed with the help of t-test and factor analysis.

The findings of the study were: (i) Sportswomen were more good-natured and easy-going, emotionally stable and realistic, cheerful and frank, duty bound and responsible, assertive, venturesome and spontaneous than non-sportswomen. (ii) Sportswomen were less tough-minded than non-sportswomen. (iii) Both sportswomen and non-sportswomen were equally intelligent, trusting, adaptive and oblivious of physical realities. (iv) Sportswomen were more polished and experienced, placid and apprehensive, experimenting, independent, relaxed, tranquil and sedate than non-sportswomen. (v) Sportswomen had better adjustment in health, society and emotions than non-sportswomen. (vi) Sportswomen and non-sportswomen were equally adjusted in home as well as in profession. (vii) Sportswomen had better overall adjustment than non-sportswomen. (viii) The difference between the attitudes of sportswomen and non-sportswomen towards physical education was not significant. (ix) Nine factors were implicit in the personality traits of sportswomen and non-sportswomen. In the case of sportswomen, these factors were identified as leadership behaviour, unsentimentalism, cooperativeness, unsatisfied and compromising behaviour, good physico-social health, realism and stability, unobstinacy, confidence and non-anxiety. In the case of non-sportswomen the factors were leadership behaviour, trail behaviour, sentimentalism, context and spontaneity, less physico-social mental health, less adjustment, social maladjustment, poor home adjustment and mistrust. (x) Of the nine factors three were found congruent among sportswomen and non-sportswomen.

**604.** TARA, P., *A Study of Self-concept, Level of Aspiration and Interests among Preadolescents of Various Socio-economic Groups*, Ph.D. Psy., BHU, 1980

The investigation aimed at studying the influence of

socio-economic status on three aspects of personality, namely, self-concept, the level of aspiration and interests at the preadolescent stage. Seven hypotheses had been postulated and tested, three of which were directed to studying self-concept, the level of aspiration and interests with reference to the socio-economic status while the fourth made a correlational study of the three aspects of personality. The remaining made a comparative study where self-concept, the level of aspiration and interests had been compared sex-wise and on the basis of urban/rural areas.

A sample of 1,000 students (500 boys and 500 girls) of Classes V and VI representing urban and rural areas of Varanasi district was drawn on the basis of purposive sampling technique. The tools used in the study were the Hindi adaptation of Piers-Harris Children's Self-Concept Scale, the L.A. Coding Test (Ansari and Ansari), Interest Record (Singh), Kuppaswamy's Socio-Economic Status Scale (urban) and Personal Data Schedule developed by the investigator. Both parametric and non-parametric statistical techniques and tests such as t-test, biserial correlation, tetrachoric correlation, chi-square were used to analyse the data.

Important findings were: (i) Self-concept scores with the socio-economic status and its aspects such as the level of parental education, parental income and the level of parental profession. (ii) A significant positive relationship was noticed between parental occupation, parents' education, monthly income of father and the level of aspiration. (iii) Socio-economic status affected the vocational interests of children. (iv) Negligible relationship existed between self-concept, the level of aspiration and interests at the preadolescent stage. (v) Boys showed a significantly superior scores in comparison to girls on various measures of self-concept such as behaviour, intellectual and school status and physical appearance and attributes, with the sole exception of popularity where the two groups were similar. (vi) On various measures of self-concept, urban and rural children showed that the two groups were similar with the only exception on popularity where the urban children scored significantly higher than their rural counterparts. (vii) Boys and girls showed some difference on their aspiration level as boys scored higher on G.D. scores than girls. (viii) Rural and urban differences with regard to aspiration level of children were negligible. (ix) Sex differences were found in four out of the seven areas of interests. Boys scored significantly higher than girls in mechanical and scientific interest areas while girls scored higher in aesthetic and social interests. (x) There was a significant impact of the place of living (urban/

rural) on all the measures of interest. The urban children scored higher than their rural counterparts on scientific, aesthetic and clerical interests while the rural children outscored the urban children on the other measures of interest areas such as mechanical, business, social and outdoor ones.

**605.** TRIPATHI, A.D., *Personality Patterns of High and Low Adolescent Self-disclosees: a Psychological Study of Bhotias of Kumaun Hill Region*, Ph.D. Psy., Kum. U., 1976

The study aimed at: (i) ascertaining the significant differences in the personality factors of high and low self-disclosees, (ii) finding out the significant differences between urban and rural adolescents with regard to the extent of total self-disclosure, and (iii) investigating the significant differences between male and female, high and low self-disclosees.

The sample consisted of 508 Bhotia male and female students in the age range fifteen to seventeen of junior, high school and intermediate colleges of both urban and rural areas of Kumaun hills. Data on 14 P.F. and Self-Disclosure Inventory (Sinha) were collected from the sample subjects. Quartile deviation, chi-square and t-test were used to analyse the data.

The major findings were: (i) Self-disclosure was significantly related to some personality variables of Bhotia students. (ii) High and low disclosees had some common personality characteristics, namely, reserved vs outgoing, less intelligent vs more intelligent, sober vs happy, expedient vs conscientious, group dependent vs self-sufficient, undisciplined self-conflict vs controlled and relaxed vs tense. (iii) The two groups of high and low disclosees had almost significant differences with regard to certain personality factors, namely, affected by feelings vs emotionally stable and vigorous vs doubting. (iv) The two groups of high and low disclosees were found to show significant difference in some personality factors, e.g., phlegmatic vs excitable, obedient vs assertive, shy vs venturesome, tough-minded vs tender-minded and placid vs apprehensive. (v) Low disclosees were found to be excitable, impatient, demanding, over-active, tender-minded, dependent, sensitive and over-protected. (vi) By and large, the high disclosee group was found to be assertive, independent, aggressive, stubborn, dominant, venturesome, socially bold, uninhibited and spontaneous. (vii) The total self-disclosure of high and low disclosees (male and female) did not show any significant differences in terms of residential background

(urban/rural) of the subjects. (viii) There were significant sex differences in self-disclosure between male and female high disclosers. (ix) There were no sex differences in self-disclosure among low disclosers.

**606.** TRIVEDI, R.M., *The Study of n-Ach Score Revealed through Children's Literature in Gujarati*, Ph.D. Edu., SPU, 1982

The main objective of the study was to find out the level of achievement motive, in terms of n-Ach score, revealed through children's literature in the Gujarati language, with a view to improving the quality of published material by suggesting modifications to authors and publishers.

All the issues of all the ten magazines published in the Gujarati language for the Gujarati-knowing children were studied for one complete year, from August 1978 to July 1979. Of the ten magazines five were monthlies, four were weeklies and one was a bi-weekly. For the purpose of scoring for n-Ach, jokes, cartoons, picture-stories, poems, mathematical riddles and puzzles were deleted from the study. In all, 2,578 stories from 256 issues of magazines were studied and scored by the researcher after establishing inter-scorer reliability with an expert in the field. All the 2,578 stories were further classified under fourteen heads, namely, (i) imagination-based stories, (ii) adventure-based stories, (iii) moral-based stories, (iv) stories related to animals, (v) folk stories, (vi) life stories, (vii) episode-based stories, (viii) humour stories, (ix) suspense or problematic stories, (x) mythological stories, (xi) historical stories, (xii) hunters' stories, (xiii) proverbial stories, and (xiv) science-based stories.

The major findings of the study were: (i) The proportion of stories containing achievement imagery was 15.59 per cent which was the lowest as compared to the stories containing task imagery (19.46 per cent) and unrelated imagery (64.95 per cent). It clearly suggested that there was a bulk of stories having unrelated imageries. (ii) Intercorrelations between stories having different imageries were very low and there was a negative correlation between the achievement-related stories and stories having unrelated imageries. (iii) The average n-Ach score for all the stories, irrespective of the nature of imagery, was 0.58 while that of stories having achievement imagery was only 3.81. The average occurrence of n-Ach score per issue of the magazine containing achievement imagery stories was 5.83 (irrespective of the type of stories included in the issue). Most of the

magazines and most of the types of stories had negative scores for n-Ach. It was thus concluded that the level achievement motive revealed through children's literature in Gujarati was very low. (iv) The adventure-based stories and life stories revealed a greater proportion of n-Ach than other types of stories. The highest contribution was of the adventure-based stories and the lowest was from the humour-based stories. (v) Most commonly revealed components of the achievement-related stories were N, I, Th, and H, whereas components like G+, G, G-, Ga+, Ga-, Bp and Bw were not seen in the stories having achievement imageries. This clearly indicated that the achievement-related stories seemed to be failing to touch the affective aspect of the human being and provided less scope for introspection and overview of the situation.

**607.** TULPUL, M., *A Pilot Study of Adjustment of Pre-university Students of the SNDT Arts College for Women*, SNDT University, Bombay, 1977

The main objective of the enquiry was to get a clear picture of the general trend of adjustment of the pre-university students of the SNDT Women's University. As additional objectives, it was intended to study the relationship between adjustment and economic status, and birth order and adjustment and also to study whether there was any adverse effect on the level of adjustment in the case of students of working mothers.

The sample comprised 213 students of the pre-university classes of the Arts college conducted by the SNDT University. Bell's Adjustment Inventory adapted to Indian conditions by the Institute of Vocational Guidance and Selection, Bombay, was used to collect data.

The major findings were: (i) In the area of emotional adjustment, about 80 per cent of the girls were found to be emotionally maladjusted, 17 per cent showed average adjustment and only 3 per cent were found to be well adjusted. (ii) In the area of social adjustment, 30 per cent showed poor adjustment and a submissive and retiring tendency. Six per cent indicated aggressiveness in social contacts. (iii) In the case of home adjustment, 25 per cent showed poor adjustment, 42 per cent average, and 33 per cent good and excellent home adjustment. (iv) Forty per cent of the girls showed a good health adjustment as against 31 per cent indicating health maladjustment. (v) In the area of general adjustment, 58 per cent of the girls showed maladjustment as against 3 per cent who were well adjusted and 39 per cent who indicated average level of adjustment. (vi) The lower middle in-

come group was the most maladjusted group in the area of home adjustment. (vii) In emotional adjustment, both the lower and the higher income groups were more maladjusted. (viii) The higher middle group was the most aggressive and the least submissive group in social contacts. (ix) Physically, the higher income group was superior to other groups without a single case of maladjustment. (x) The last-borns tended to be well adjusted as compared to the first-borns. (xi) Working mothers did not make any difference with regard to the mode of adjustment of their children.

**608.** UCHAT, D.A., *Study of the Self-concept of Pre-university Students Enrolled in the Arts, Science, and Commerce Faculties of Saurashtra University*, Ph.D. Edu., Sau. U., 1979

The main objective of the study was to determine the relationship, if any, between the nine dependent variables on the one hand and eight independent variables (faculty, college size, social class, religious affiliation, social group membership, sex, age, and birth order) on the other hand.

For the study, self-concept was so defined as to include perceptions of self, perceptions of college and perceptions of the social milieu. Operationally, self-concept consisted of the subject's responses to three sets of dependent variables, namely, self (me, me as a student and attitudes towards my own group), college (teachers and the examination system), social milieu (opportunities for making friends, social activities, community acceptance of me and attitudes of other groups towards his group).

The sample consisted of 3,310 students (2,201 male and 1,109 female) of the pre-university classes of sixteen arts colleges (1,279 students), nine science colleges (810 students) and sixteen commerce colleges (1,221 students) which were affiliated to the Saurashtra University. The semantic differential technique, developed by Osgood, was used for measuring self-concept. For each dependent variable, eleven pairs of bipolar adjectives were selected. The statistical techniques used were F-test, t-test and factor analysis.

The major findings were: (i) The students from the arts faculty had the highest self-concept, while those from the science faculty possessed the lowest self-concept and those from the faculty of commerce ranked in the middle. (ii) The college size was not related to self-concept. (iii) The students from advanced class had higher perception of themselves, themselves as student,

opportunities for making friends and their community acceptance than the students belonging to backward class. However, social classes did not differ in their perception of teachers, examination system and social activities. (iv) The Hindu and Muslim students possessed almost identical self-concept. (v) On the whole, all the four social groups—Patel, Rajput, Brahmin and Harijan—had almost similar self-concept. (vi) Sex was related to self-concept; the female students possessed higher self-concept than the male students. (vii) U-type relationship was observed as regards age as an independent variable. (viii) The birth order had no relationship with self-concept. (ix) College students had the poorest perception of the examination system. (x) Social activities got lowest endorsement among the elements of social milieu. (xi) The college (teachers and the examination system) was seen less favourably by all groups than self and social milieu. (xii) Factor analysis yielded three factors—socio-personal self, performance-oriented self and perceived educational climate.

**609.** UPMANYU, V.V., *An Investigation into the Relationship between Socio-metric Status and Different Components of Anxiety*, C.R. College of Education, Hissar, 1974

The investigation aimed at finding out the relationship, if any, between sociometric status and different components of anxiety. The components of anxiety studied were lack of self-sentiment development, ego weakness, suspiciousness, paranoid-type insecurity, quit-proneness, frustration tension and id-pressure. The sample comprised seventy-one students of Classes X and XI including forty boys and thirty-one girls. The tools used were the sociometric technique developed by Moreno and IPAT Anxiety Scale Questionnaire. The t-test was used to test the significance of difference.

The major findings were: (i) Anxiety and sociometric status were negatively correlated. Popular subjects were less anxious than those who were isolated by their classfellows. (ii) Isolates and rejectees did not differ in their anxiety level. (iii) There was no significant difference between the means of scores of popular, rejectees and isolates on lack of self-sentiment development, suspiciousness, paranoid-type insecurity and id-pressure. (iv) Populars and rejectees differed significantly on the component of ego weakness, but populars and isolates did not differ significantly on this component. Ego weakness was found to be an important factor for the isolation or rejection of subjects. Rejectees scored the



maximum on this component. (v) Rejectees scored high on component of quit-proneness and differed significantly from the populars but not from the isolates.

- 610.** USHADEVI, M.D., *A Study of the Motivational Pattern of Evening Students Studying in Bangalore University and Its Constituent Colleges*, Institute for Social and Economic Change, Bangalore, 1981

The objective of the study was to identify the major or overriding motives in the evening college students of Bangalore City for taking up evening courses. The study also aimed at studying the characteristic background of evening students.

The sample consisted of 385 evening students drawn from different undergraduate and postgraduate evening courses of Bangalore University. A questionnaire was developed to tap the different motives in an individual for taking up evening courses. The broad categories of motives included knowledge, economic, self-esteem, political, social and personal areas. Data were analysed using percentages.

The following were the major findings of the study: (i) The number of students in the undergraduate evening courses was more than that of postgraduate evening courses particularly B.Com. and B.A. (ii) Men availed themselves of evening courses in greater number than women. (iii) A large number of Hindus utilized this opportunity than the other religious groups; Brahmins, particularly, were found availing themselves of this opportunity more than the socially or economically deprived communities. (iv) Over 70 per cent of the evening students were employed, the majority of whom were in private organizations and held clerical jobs. (v) The majority of the evening students came from families with low income, low occupation and low education. (vi) The knowledge motive was overriding the other categories of motives for taking up evening courses. But when specific motives were considered in different categories, the motive of fulfilling the desire of becoming a graduate or a postgraduate was found to be the uppermost motive for taking up evening courses.

- 611.** VAIDYA, N., *The Growth of Logical Thinking in Science during Adolescence*, Regional College of Education, Ajmer, 1979 (NCERT-financed)

The objectives of the investigation were: (i) to study thinking (problem-solving) processes, evoked by indi-

vidual problems, having a continuous chain of reasoning, (ii) to study the same processes, appropriately grouped, regardless of typology of problems, (iii) to study errors as they occurred in solving these problems, (iv) to determine relationships between scores on thinking and variables like intelligence, sex, various immediate test reactions to problems on presentation and adjustment, (v) to find out the characteristics of successful and unsuccessful problem-solvers, (vi) to analyse the structure of the appropriately grouped processes of thought, functionally, and interpret them psychologically, and (vii) to point out the main educational implications for science teaching.

A sample of 100 boys and 100 girls, from the two boys' and three girls' schools, ranging from 10.5 to 15.5 years corresponding to Grades VI through X, was selected on the basis of intelligence quotient ranging from 70 to 120 and of lower socio-economic status. The tools used were Jalota's Group Mental Ability Test, Kuppaswamy's Socio-Economic Status Scale and Saxena's Personality Inventory on Adjustment. Seventeen investigative problems were chosen. The variables studied included grade, intelligence, adjustment, test reactions to problems, felt difficulty, confidence and interest in the problem, and seventeen schemes of thought represented in the problems. A correlation matrix was obtained for the pooled sample ( $n = 200$ ), which was then factor analysed using principal component analysis for obtaining factors and rotation by the varimax method.

Significant findings of the study were: (i) Ten factors were extracted using varimax method of rotation. The accumulated percentage of trace total variation accounted for by the first through the last component or factor ranged between 35.409 and 72.755. (ii) The first factor, schematic learning-general, had high positive loadings on twenty-five variables. Except for the factor loading of school adjustment, all other factors loadings, related to various aspects of adjustment and immediate test reactions to the problems of presentation, were significant. (iii) The second factor was interpreted as adjustment factor. The five tests reflecting adjustment had high loadings. (iv) The third factor appeared very clearly and dominantly and was akin to attitude towards problem-solving or problem-orientation. Intelligence, grade adjustment and all problems as well as schemes of thought had significant loadings. Other tests having significant loading were understanding the problem, interest in the problem and confidence in the problem. The factor was interpreted as problem-orientation. (v) The fourth factor termed sensing problem was closely identified with plasticity in thought processes, fluency

or interest in generating difficult problems (questions). (vi) The fifth factor, interpreted as symbolism, was closely identifiable with using algebraic symbol in proportion context or short of it, space or visualization factor. It ran through grade, seven problems and eight schemes of thought. (vii) The sixth factor was interpreted as testing hypotheses. It had a high loading on the scheme of thought relating to testing and verification of hypotheses. Stating procedures or the variable verbalizing methods of attack had the second highest loading on the factor. (viii) The seventh factor was interpreted as using constant difference in arithmetical situations only. There were significant loadings in five tests, namely, positive summation series problem, hotel problem, generalizations to algebraic symbols, using constant difference, and negative summation series problem, on this factor. (ix) The eighth factor was termed aspect character. (x) The ninth factor, interpreted as seeing the problems as a whole, ran through grade, felt difficulty of the problem and three problems and three schemes of thought. (xi) The tenth factor, interpreted as intelligence, ran through intelligence and two problems as well as two schemes of thought. Variables relating to grade, adjustment and problem-orientation did not have significant loadings.

**612. VASHISHITHA, A.C.,** *A Study of Alienation Level in relation to Adjustment, Authoritarianism and Conservatism.* Ph.D. Psy., Agra U., 1981

The study was an attempt to evaluate and establish the relationship between alienation level and personality variables like adjustment, authoritarianism and conservatism.

To achieve the objectives the researcher used the normative survey method and the causal comparative method. Data were collected from postgraduate college-going students of Meerut University. It was assumed that the conclusions drawn about the presence of the phenomena of alienation in relation to certain personality variables would provide an estimate of general trend of the students and the youth of India. The sample consisted of 500 students selected by the stratified random technique. For the purpose of the measurement of personality variables the following standardized tools were used: Adjustment Inventory (Asthana) Indian F-Scale (Bhushan) Mohsin C Scale and an inventory for measuring alienation developed by the researcher.

Some of the major findings were: (i) The total alienation level of an average student was influenced by au-

thoritarianism, conservatism and poor adjustment. (ii) The personality variables which contributed to total alienation and its components were authoritarianism, conservatism and poor adjustment. (iii) Poor adjustment, authoritarianism and conservatism contributed to the growth and development of feelings of powerlessness, normalness and social isolation. (iv) Significant differences in respect of authoritarianism existed between more alienated subjects, on the one hand, and normally alienated subjects and less alienated subjects, on the other. (v) No significant difference existed between the mean authoritarian scores of normal and less alienated subjects. (vi) The normally alienated group did not differ significantly in respect of its conservatism from the less alienated group. (vii) The more alienated subjects were more conservative than those subjects who were normally alienated. (viii) Poor adjustment in life was found to be a significant condition for the development of the feeling of life alienation. (ix) Adjustment had significant and negative relationship with authoritarianism and conservatism.

**613. VASHISHTA, K.C.,** *Personality Differences among Family-reared and Institution-reared Boys and Girls as Indicated by Rorschach Ink Blots.* Ph.D. Edu., Kur.U., 1982

The major objectives of the study were to find out the difference on the thirteen personality traits between (i) family-reared boys and institution-reared boys, (ii) family-reared girls, and institution-reared girls, (iii) Family-reared boys and girls and institution-reared boys and girls, (iv) family-reared boys and family-reared girls, (v) institution-reared boys and institution-reared girls, and (vi) family-reared and institution-reared boys and family-reared and institution-reared girls.

A purposive sample of fifty boys and girls from residential public schools and fifty boys and girls from common schools was selected. The two groups were equated on the variables of age, grade and socio-economic status. All the sample subjects were interviewed through a non-directive interview schedule and were then administered the Rao Socio-Economic Status Scale and the Rorschach Ink Blot Test. The data were analysed through the t-test and the chi-square test.

The findings of the study were: (i) Family-reared boys and girls were superior on the trait of emotional construction. (ii) Family-reared boys and family-reared boys and girls possessed abundance of creative impulses. (iii) Institution-reared boys and girls possessed marked

inhibition of sexuality. (iv) Family-reared boys and girls were more dependent. (v) Family-reared boys and girls exhibited traits regarding relish for sexual experiences. (vi) Institution-reared boys felt difficulty in establishing close personal relationship. (vii) Family-reared boys and girls were more interested in practical concerns than in theorizing. (viii) Family-reared boys and institution-reared girls had a high level of general anxiety. (ix) Institution-reared girls had high anxiety concerning bodily functions. (x) Institution-reared boys and girls were highly introspective. (xi) Family-reared boys and girls had high inhibition of aggression. (xii) Family-reared boys and institution-reared girls were superior in emotional construction. (xiii) Family-reared boys and institution-reared girls had abundance of creative impulses. (xiv) Family-reared girls and institution-reared boys possessed marked inhibition of sexuality. (xv) Family-reared boys and institution-reared girls showed a high degree of dependence. (xvi) Family-reared boys had a high degree of empathy. (xvii) Family-reared girls faced greater difficulty in establishing close personal relationship. (xviii) Institution-reared girls were more interested in practical concerns than in theorizing. (xix) Family-reared boys and institution-reared girls possessed a high level of general anxiety. (xx) Family-reared boys were more prone to introspection. (xxi) Family-reared boys and institution-reared girls possessed high inhibition of aggression.

**614.** VERMA, K.K., *A Comparative Study of Some Differentiating Personality Variables of Sportsmen and Non-sportsmen*, Ph.D. Edu., Kur. U., 1980

The objectives of the study were: (i) to compare different personality variables of sportsmen and non-sportsmen, and (ii) to compare the values preferred by sportsmen and non-sportsmen.

The population for the study consisted of sportsmen who participated in the College or Inter-University tournament camps as well as non-sportsmen who were on the rolls of the degree colleges of Haryana. Purposive sampling was resorted to. Initially, 500 sportsmen and 500 non-sportsmen were selected. This preliminary sample served as a pool for selecting pairs of sportsmen and non-sportsmen who were matched on intelligence and socio-economic status. The final sample consisted of 249 sportsmen and 249 non-sportsmen. They were administered the 16 PF Questionnaire and the Vernon Value Test. The data were analysed with the help of the t-test.

The results of the study were: (i) Sportsmen were more

dominant in their personality make-up. (ii) The attributes under the happy-go-lucky aspect played a significant role in making a sportsman's personality. (iii) Traits of the stronger super-ego strength were a distinguishing factor of sportsmen. (iv) Sportsmen were more tough-minded than non-sportsmen. (v) Sportsmen were less sentimental and more worldly, shrewd and calculating. (vi) Attributes under the guilt proneness aspect were a part of a sportsman's personality. (vii) Group-adherence was more among sportsmen. (viii) Traits under the relaxed aspect of personality were more akin to sportsmen. (ix) Sportsmen and non-sportsmen did not differ significantly on personality traits like reserved vs. outgoing, less intelligent vs. more intelligent, emotionally less stable vs. emotionally stable, shy vs. venturesome, trusting vs. suspicious, practical vs. imaginative, conservative vs. experimenting, indisciplined vs. socially precise. (x) Non-sportsmen placed greater emphasis on theoretical and religious values. (xi) Sportsmen desired practical type of education and regarded unapplied knowledge as waste. (xii) Sportsmen were less dominant on aesthetic values but more dominant on social values than non-sportsmen. (xiii) Sportsmen and non-sportsmen did not differ significantly on political values.

**615.** VERMA, S.C., *The Social and Economic Background of Juvenile and Adolescent Delinquency in Kanpur and Lucknow*, Ph.D. Soc., Luc. U., 1959

The aim of the study was to investigate the social and economic background of juvenile and adolescent delinquency in Kanpur and Lucknow cities.

The sample comprised three hundred cases of delinquency, one hundred and fifty each from Kanpur and Lucknow. These comprised the entire population of delinquents between seven and twenty-one years, registered on fixed days in successive weeks in the Districts Jail, Reformatory School and Probation Office in Lucknow and Kanpur. Data were collected through repeated and controlled interviews with the delinquents, their parents, siblings and relatives and neighbours, companions, teachers as well as officers of the penal and correctional institutions. The secondary sources of information were the police records, courts and penal institutions and the probation and school offices. Percentages were computed from the collected data.

The findings were: (i) The average age of the juvenile delinquent was twelve years while that of the adolescent delinquent seventeen years. The maximum ages of the

juvenile and the adolescent offenders were fourteen and sixteen, respectively. (ii) The proportion of delinquents belonging to Hindu religion was significantly higher than those who belonged to Islam or such other communities as Christians and Sikhs. The proportion of delinquents from the Muslim community was significantly higher in Lucknow. (iii) The highest proportion of delinquents was of those convicted for offences against property; it was significantly higher in Lucknow. The next were the delinquents who had a record of offence under various Special Acts, the proportion of such cases being significantly higher in Kanpur. In the group of offences under Special Acts vagrancy was the most common offence in Lucknow and violation of the Excise Act in Kanpur; gambling was significantly more common in Kanpur. (iv) The proportion of delinquents convicted for offences against property was highest among Muslims followed by intermediate Hindu castes. (v) The proportion of delinquents who came from unbroken homes was significantly higher than those of who came from completely broken homes. (vi) The proportion of delinquents who were the youngest children was higher than that of those who were the eldest. In a few cases, the delinquent was the only child. (vii) In most cases the parents of the delinquents were either illiterate or had read up to primary classes only. A significantly larger proportion of mothers was illiterate and far more fathers had read up to the primary stage, or beyond. (viii) The proportion of delinquents who never visited places of worship was significantly higher than that of those who did, besides, the visits were of irregular nature, more so in Kanpur than in Lucknow. (ix) The average monthly income of the family was Rs. 72 while in Lucknow, the fathers of the delinquents were mainly engaged in services like those of washerman, domestic servant, barber, shop assistant, hotel waiter or retail trader of vegetables, milk, etc., in Kanpur they mostly worked as labourers—factory and casual—and retail traders. (x) The housing condition of most delinquent families was far from wholesome. The neighbourhood conditions of the delinquents were poor or inadequate in respect of sanitation, lighting and physical state of the house located therein and of streets or bylanes. (xi) The relationship between parents and siblings, parents and relatives, among siblings, between siblings and relatives and among relatives was usually of a cordial nature. (xii) The delinquents did not receive companionship at home. (xiii) Their educational standards were poor. (xiv) Most delinquents were in the habit of using profane language, smoking, loafing about and coming home late at night, disobeying the parents particularly father, stealing in the home and disposing of

home belongings, gambling and masturbation. (xv) The places visited during leisure time were picture houses, markets and railway stations which were crowded places and therefore afforded greater chances of picking pockets, stealing, etc.

616. VYAS, S.K., *The Origin of Prejudice in Children—a Psychological Study*, Ph.D. Psy., Madras U., 1971

The aim of the investigation was to study the influence of various sociological and personal factors, namely, caste, religion, socio-economic status, age and sex on the learning of concepts and the respective prejudices among children. The attitude of parents and their behavioural practices were also studied as factors influencing the learning of prejudices by children.

The main hypothesis advanced was that prejudice was learnt and increased with advance in age. The attitude of parents towards the in-group and the out-group and their behavioural practices would be related to children's prejudices. A modified version of Clerk's doll interview method was adopted to study the prejudices of children. Three tools were administered to parents — Behavioural Scale, Sharma's Prejudice Scale and Semantic Differential Test. The behavioural scale studied the orthodoxy and the non-permissiveness of the parents. From Sharma's scale, the sections related to authoritarianism, conventionalism and ethnocentricism were used. The Semantic Differential Test studied the attitude towards thirteen in-group and out-group concepts. Seven hundred children from nine schools ranging from three to eight years in age were sampled for the study. The parents of 518 children returned the Behaviour Scale and the Prejudice Scale duly filled in and only 322 parents returned the Semantic Differential Test.

The major findings were: (i) Prejudices were learnt and increased with advance in age. (ii) Significant differences in the case of religious, class and linguistic prejudices were found in children in the age group three to eight, but in the case of caste prejudice the differences were not significant. (iii) A low but positive correlation was found between different types of prejudice at each age level. (iv) Boys expressed higher prejudices than girls in all age groups. (v) The higher the caste of the children, the greater were the prejudices expressed. (vi) Socio-economic status was related to prejudice of class and language but not to religion. (vii) Religious prejudice was related to parent

but not to authoritarianism, conventionalism, orthodoxy and non-permissiveness. (viii) Children's caste, linguistic and class prejudices negatively correlated with parents' conventionalism.

**617. YADAV, R.K.,** *Emotional Factors in Problem Children in the Age-group of Seven to Twelve Years*, Ph. D. Psy., Agra U., 1980

The investigation attempted: (i) to assess the actual conditions in which the problem children lived and behaved, (ii) to know the important factors responsible for the behaviour disorders, and (iii) to suggest some remedial measures. The possible factors studied were emotionality, environmental conditions like uncongenial family condition, rejection by parents, quarrels between parents, separation from one or both the parents, separation of parents, poverty, the number of children in the family or neighbourhood. The study formulated the following hypotheses: (i) Uncongenial family conditions lead to problem behaviour. (ii) Rejection by parents is a cause of problem behaviour. (iii) Quarrels and incompatibility between the parents is a cause of problem behaviour. (iv) Separation from one or both the parents developed problem behaviour. (v) Poverty is a cause of problem behaviour. (vi) The number of children is related to problem behaviour. (vii) Neighbourhood is a definite factor in the problem behaviour.

The study used the social survey method by taking a purposive sample. The tools used were the Depression Scale, MMPI, adjustment inventory and questionnaires for getting information pertaining to the family's conditions and other relevant information about the child.

The results of the study were: (i) The problem behaviour was more frequent among the children of the age-group seven to twelve years when little carelessness caused problems of adjustment. (ii) The children indulged in all types of misbehaviours from sexual immorality to stealing and use of obscene language. Truancy was of highest frequency. (iii) Among the factors responsible for this type of behaviour were family conditions like the separation of parents, low income and low education. (iv) The highest percentage of problem children was found among the business class of society. Nuclear families had greater number of problem children than joint families. The main reason was attributed to father not having time to look after the children and the children felt rejected. (v) Harsh treatment and strict discipline led to maladjustment as well as tension and quarrels on money mat-

ters as well as on domestic work contributed to the problem behaviour. (vi) Home environment, and drinking, smoking and gambling by parents also contributed to problem behaviour among children. (vii) The size of the family and the number of children in the family had serious effects on the character of the children. Housing problem (shortage of accommodation) also gave rise to problem behaviour. (viii) Living standard and caste prejudice proved to be a factor in the development of problem behaviour. (ix) The children had little interest in school, loitered, did not want to go to school and instead visited hotels, cinema houses or stayed at home and read cheap novels. The games were also low and cheap like playing with marbles, *gulli danda*. (x) The types of friends also played an important role in developing problematic behaviour. (xi) The problem children were those who misbehaved but were not subjected to legal punishment.

**618. ZAFAR, S.U.,** *An Experimental Study of Retention of Phonemic and Semantic Information in Short and Long Term Memory in relation to Certain Personality Variables*, Ph.D. Psy., AMU., 1976

The study was undertaken to determine the differential effect of the type of task similarity (i.e. phonemic and semantic similarity), anxiety and imagery type (i.e. visile and audile) on short-and long-term memory.

The factorial design was used in which three independent variables (type of similarity, anxiety and imagery type), each varying in two ways and two measures of the dependent variable, retention (short-term recall and long-term recall) were employed. Thus, there were eight possible combinations for each of the two measures of retention. A mixed test of paired-associates consisting of phonemically similar stimulus items and semantically similar stimulus items, was presented to four groups of subjects with the order of presentation of the two sets of pairs being counterbalanced for half of the subjects of each group. The four groups of subjects, namely, high anxious visile, high anxious audile, low anxious visile, and low anxious audile, used in the experiment, were selected on the basis of scores obtained by them on the Sinha Anxiety Scale and on the adapted form of Bower and Kraepelin's tests of imagery. The recall scores obtained by each of the four groups for phonemically similar items and those for semantically similar items, though presented in a mixed test, were treated as separate observations. A modified form of  $2 \times 2 \times 2$  analysis

of variance was used to analyse the data.

The findings were: (i) Phonemic similarity had detrimental effect on the short-term recall but had no such effect on the long-term recall. (ii) Semantic similarity depressed the long-term recall but had no effect on the short-term recall. (iii) Both anxiety and imagery type had no differential effects on the short-and the long-term recall. (iv) An interaction was found between imagery type and similarity in the case of long-term recall. No such interaction was found in the case of short-term recall.

- 619.** ZARGAR, A.H., *A Study of Expression, Neuroticism and n-Achievement in relation to Intelligence, Creativity and Scholastic Achievement*, Ph.D. Edu., Kashmir U., 1980

The investigation aimed at studying personality correlates like expression, neuroticism and n-Ach in relation

to intelligence, creativity and scholastic achievement.

The study was conducted on a sample of 435 bachelor of arts students. The tools used were Culture Fair Test of Intelligence, Scale 3, Forms A and B, Maudsley Personality Inventory, Incomplete Sentences Blank Test (Mukherjee) and Test of Creative Thinking (Mehdi).

The main findings were: (i) A moderate degree of neuroticism, to a specific level, did not impair the level of subjects whereas an extreme degree of neuroticism impaired their performance on intelligence tests. (ii) The high and the low neurotic groups did not show any significant differences in creativity. (iii) The level of expression (high and low) was not related to intelligence. (iv) There was no significant relationship between the level of expression and the scholastic achievement. (v) The high need achievers had a high degree of creativity (verbal) whereas low need achievers had a high degree of non-verbal creativity. (vi) The high need achievers had a better scholastic achievement than the low need achievers.