

Personality, Learning and Motivation

A Trend Report

T. V. RAO
P. MEHTA
M. L. RAO

A SURVEY of doctoral level and other researches over the last twentythree years indicates a wide ranging coverage from specific studies of children's reactions to frustration, aggression and anxiety, to problems related to medical, agricultural and teacher training students. Most of the studies have adapted and/or developed further the instruments and methodology used abroad and some of them have developed new instruments. Ph.D. theses and project reports from various Indian universities and institutes have been sighted and abstracted for the present trend report. Of these, 47 studies relate to personality, 24 to learning, 15 to motivation, 11 to adjustment problems and 7 to juvenile delinquency.

A. PERSONALITY STUDIES

Out of the 47 researches on personality, 40 are Ph.D. theses and 7 are project reports. The first of the personality studies appeared in 1953 was by Srivastava from Allahabad University. It was a comparative study of the personality of males and females. Two studies appeared subsequently from the same university in the year 1954 and 1956 surveying the fantasy life of girls using the Rorschach Test and TAT (Jain, 1954; Ghosh, 1956). From 1957 onwards other universities like Delhi University, Banaras Hindu University, Mysore University and Rajasthan University which worked in this area started producing Ph.Ds. in Education. Of the 47 studies, a majority have been contributed by Agra University during 1967 to 1973, followed by Allahabad University ranging over a period of about 16 years. Out of 40 Ph.D. theses, 12 theses appeared from the university departments of psychology.

Area Covered

The different areas of research covered by these 47 studies when arranged chronologically include: personality of males and females (Srivastava, 1953), fantasy life of girls (Jain, 1954; Ghosh, 1956), children's reactions to frustration (Pareek, 1958), develop-

ment of ego-ideal in children (Pratap, 1960), personality differences in graduates (Tyagi, 1960), personality characteristics of high school leaders (Nayar, 1962), aggression, fear and anxiety in children (Julka, 1963), personality patterns of boys and girls (Saraswat, 1954; Gaur, 1967; Sharma, 1967), fatigue of school children (Prasad, 1966), variation in intelligence with occupational training course (Misra, 1967), emotional stability of superior and average children (Lal, 1968), mental maturity in Indian school children, personality of engineering, law, medical and teacher training students (Pal, 1969), neurotic behaviour in adolescents (Srivastava, 1970), personality of students from religious and secular institutions (Sodhi, 1970), self esteem and social personal orientation as related to parental behaviour (Smart, 1970), personality of students using unfair means in examinations (Singha, 1970), correlates of art appreciation (Saroja, 1970), causes of frustration and level of aspiration (Mathur, 1970), personality of nursery school children (Saran, 1970), personality of stars and isolates of primary school children (Rajput, 1970), personality correlates and isolates of primary school children (Rajput, 1970), personality correlates of attitude towards social change (Nath, 1971), personality, age, motivational effects on persistence (Gupta, 1971), personality traits of adolescent girls (Uppal, 1971), personality patterns of college students specialising in different fields (Mathew, 1971), educational aspiration, SES and educational attainment (Bisht, 1972), children's paintings as indicators of personality (Mathur, 1972), effect of N.C.C. training on personality (Nair, 1972), differential personality traits in intellectually superior, average and below average students (Suri, 1973), personality characteristics of the socially accepted and rejected girls (Nagar, 1973), reactions to frustration in the school situations (Sharma, 1973), divergent thinking in relation to certain personality dimensions of adolescents (Verma, 1973), independence conformity behaviour of intellectually bright and dull pre-adolescents (Gupta, 1973), personality patterns of children of criminal

tribes of U.P. (Srivastava, 1974), attitude towards science and scientists among various groups of students and teachers (Sood, 1974), some personality determinants of vocational maturity (Kathuria, 1974), some factors associated with interest of boys and girls (Srivastava, 1974), and development of self-concept in relation to intelligence, learning and achievement at adolescent level (Mohan, 1975). There are seven projects in this area sponsored by UGC, ICMR and Ford Foundation. The areas covered by these projects are self concept of disciplined and undisciplined students (Deo, 1967), Zeigarnik effect in relation to ability, sex, interest and familiarity with the task (Deo, 1968), mental health and academic achievement of successful and failed students (Wig and Nagpal, 1971), attitudes to mathematics of high school students (Desai, 1973), attitudes and choices of college girls in Rajasthan (Mehta, 1974), personality profiles of the under and high achievers (Jayagopal, 1974), and the effect of time and education on need for cognitive consistency (Sahu, 1970).

Scope and Design

The following points can be observed from these studies regarding their scope and methodology employed :

- (1) All levels of students have been studied from the nursery to the university stage including professional college students.
- (2) Although studies on the personality of sections of students are available, there seems to be more concentrated efforts on exploring the personality of high school going children than on college students. Twenty-six out of the fortyseven studies are on high school students, ten on the college students, six on pre-adolescents and five on adults. Some of the studies have drawn both high school and college students.
- (3) While the earlier studies were concerned mostly with a mere exploration of the personality patterns of students, and concerning sex differences, the studies of late (i.e., from 1968 onwards) have started extending their horizon to different aspects of social life of the students from the individual personality studies.
- (4) While the earlier studies were mostly of comparative and survey type, the recent studies tend to be correlational, attempting to investigate the relationship between different environmental variables.

- (5) After 1970 some new areas of research, like conformity behaviour, divergent thinking, cognitive consistency, etc., appeared in the field of personality.

Methodology

In fact, when these 47 studies are classified on the basis of their methodology, 22 of them turn out to be comparative studies, comparing the personality of two or more groups (males vs. females, stars vs. isolates, etc.), 8 are descriptive and normative studies on some selected groups of subjects, 7 are of survey type, 6 are correlational, 2 are analytical and 3 are developmental. Some of the studies used mixed methodologies and have been grouped in more than one category.

Variables

Appraisal and analysis of these studies also indicate that a wide variety of personality variables have been studied by them.

Forty-two personality variables were studied by these personality studies. A few variables like intelligence, adjustment, personality needs, patterns and fantasy, academic achievement, attitudes, sex differences and introversion-extroversion seem to have been studied by quite a few investigators. Adjustment is particularly noteworthy, because besides the 11 studies that included this variable, there have been other 11 studies conducted exclusively on this topic to be mentioned later in this report. Besides, adjustment has also been studied by a few more researchers who used TAT and other projective techniques, but not explicitly using the term adjustment. It seems that one important concern of those working in the field of education has been with academic achievement and therefore various personality correlates of achievement have been studied.

Sample

Coming to the nature and scope of the sample studied by these investigators, a majority of studies, amounting to 26, seems to have concentrated on the adolescent group or high school students. This is understandable in view of the need for studying students at this level as well as the ease with which the samples could be studied with appropriate verbal tests. Probably due to the difficulties there are only 6 investigations reported on nursery or primary school children (the pre-adolescents) while there are 10 studies on college subjects, and 3 studies also deal with adults who are not students. Two of these studies include all these groups starting with adolescents.

Instruments

With respect to the research instruments or tests used in these studies, quite interesting trends emerge. Almost all these studies have used personality inventories (most of them using more than one), usually the standard ones but some adapted specifically for the purpose.

There are only 24 new instruments developed to assess some of the personality variables. Most of the researches show a tendency to use standard instruments rather than to develop new ones. Projective techniques specially the TAT and the Rorschach Ink Blot Test are used by a number of these investigators. Only one adaption reported is that of the Rosenzweig's Picture Frustration Study. Besides these instruments, the investigators have also made use of other research techniques like observation, autobiographical, case histories, interviews and so on.

A significant trend of 'instrument dependent research' is seen in the area of personality. There appears to be a great tendency in the researcher to plan their studies around a few instruments that are readily available. While this kind of research provides good data for comparative studies with standard instruments, there is always a danger for the researcher to get biased by these instruments in certain directions. This kind of 'instrument dependent research' also poses danger of limiting the areas of exploration by the researcher and narrowing the scope of the studies.

Statistical analysis

The types of statistical techniques used in these studies have varied from simple calculations of percentages, means and standard deviations to factor analytical approaches. Correlation coefficients of different kinds and non-parametric statistics have also been used.

This completes a broad overview of the research trends in the area of personality. This overview gives the impression that although researches in this area are more in number covering as many as 42 personality variables, many other aspects of personality that are relevant to the educational psychologists have been neglected. Although one third of the total researches in this area are conducted by the university departments of psychology, most of these researches remain exploratory in their nature.

Moreover, such exploratory studies conducted in the past do not seem to have provided any productive guidelines for future research studies. A naive researcher who is only familiar with the problems of

education in the country would expect the researchers to explore problems like, what kind of school or college environment is required to develop certain desirable personality traits like creativity, achievement, etc., what kind of impact the teacher personality has on the students' personality development, to what extent it is possible to change the teacher and student personalities, what kind of teacher behaviour influences student personality and in what way, etc. Socialisation process among the students, structural and environmental determinants of student personalities and socialisation, development of higher order needs in students are some areas that recent developments in educational psychology warrant. More experimental studies are required to answer some of these questions. Personality research in educational psychology has unfortunately been limited to the students and the more important personnel in education — the teachers, educational administrators, etc. — have comparatively been neglected. A few of the studies on teachers and administrators are reported in chapters on teaching and teacher behaviour, teacher education, and educational administration. Studies using more sophisticated methodology and studying higher order personality variables like personal orientation, self actualization, need achievement, level of aspiration, etc., are needed.

B. PERSONALITY OF JUVENILE DELINQUENTS

Besides the 47 studies covered above, 7 doctoral studies are done on personality patterns of juvenile delinquents and institutionalised people. All these 7 studies were conducted at 7 different universities (viz., Banaras, Allahabad, Ranchi, Rajasthan, Delhi, Agra and Vikram universities). The first of these was Gopal Krishna (1956) at BHU. Gopal Krishna attempted to study the personality patterns of 180 delinquents of 16 to 24 years of age using the Rorschach Test, the TAT and the MMPI. The rest of the studies were conducted more or less on similar patterns and were meant to delineate the personality patterns of adolescent delinquents. The only addition in some of the later studies was the study of the delinquent personality by using other tests besides the TAT and the Rorschach Test. The other tests used by investigators were the Bhatia's Battery of Performance Test (Gupta, 1959), the Alexander's Passalong, the Goodenough's Draw-a-Man and the Word Association Test (Bose, 1960), the Raven's Progressive Matrices, the Bernreuter's Personality Inventory, the Rotter's Incomplete Sentence Blank and the Allport-Vernon-Lindzey's Study of Values (Mirchandani, 1970) and the Maslow's Security-Insecurity, Inventory (Rajguru, 1971).

Four of these 7 studies used controls and compared their personality structure with delinquents.

C. ADJUSTMENT PROBLEMS

Of the 11 studies that could be grouped under this area, 7 are directly on school adjustment of adolescent boys, 2 on gifted (Pandit, 1973), and handicapped children (Pinto, 1974). One study is a comparative study of bright and dull children on personality habits (Patel, 1967) and other on the mental symptoms of school children (Sen, 1971). Of these, 5 studies were conducted at M.S. University of Baroda and one each at Allahabad, Bombay, Delhi, Gujarat, Kurukshetra, and Mysore universities. The areas covered by these studies include: needs of adolescent girls and their bearing on individual adjustment (Nanda, 1957), factors related to adolescent adjustment (Bhatt, Patel, Patel and Parikh, 1961), adjustment problems of adolescents (Kakkar, 1964), character traits of dull children in rural area and the problem of their education (Patel, 1967), problem of school adjustment (Bhagia, 1966), adjustment of physically handicapped children (Pinto, 1974), adjustment problem of underachievers (Bhatt, 1971), social climate and characteristics of pupils (Kumar, 1972), adjustment differences at different levels of general intelligence and socio-economic status (Mattoo, 1972), adjustment problem of the gifted children and their reactions to frustration (Pandit, 1973), and five major factors contributing to certain psychological problems of pre-adolescents (Pereira, 1974). Most of these studies were conducted on high school students. In some of these studies new adjustment inventories have been developed which have since become popular (for example, Bhagia, 1966). The Saxena's Adjustment Inventory and the Asthana's Adjustment Inventory have been used in two studies. The rest of them have developed their own inventories and standardized them. Other instruments like the Rorschach Ink Blot Test, the Raven's Progressive Matrices, the Mooney Problem Check List, the Taylor's Manifest Anxiety Scale, the TAT, the Eysenck's Personality Inventory, the Dasgupta's Parental Love Inventory, the Roy's Group Intelligence Test, the Allahabad Bureau's Verbal Test of Intelligence, the Kuppuswamy's SES Scale, etc., have been used and scores on some of these instruments have been correlated with the scores on adjustments.

While the interest in this area of study still seems to persist in the researchers, these studies do not go beyond surveying or comparing the adjustment patterns of selected groups of students. Secondly, the concentration is mostly on students like in other per-

sonality studies, and the teachers seem to have been badly neglected — may be sometimes it is taken for granted that the teachers are well adjusted. This is something that needs to be explored at this stage of the research on personality adjustment. Here again environmental correlates of adjustment both in the teachers and students, job satisfaction or work motivation of students, the possibilities of enhancing the school adjustment of students by environmental variation or by teachers' verbal behaviour modification, etc., need to be studied. Perhaps before that, the dynamics of school adjustment also needs to be further explored.

D. LEARNING

While the areas of personality, discussed so far, covered about 65 studies on different aspects of personality including personality traits of normal and delinquents, adjustment patterns of adolescents, etc., the studies related to learning and motivation seem to have received rather disproportionately low attention by the scholars in this field. Learning as well as motivation being core areas of educational psychology, one expects more researches in these areas than on the allied ones. However, there appears to be 18 doctoral theses and 6 reports financed by various agencies conducted in the area of learning.

The major areas covered by these 24 studies chronologically include: bilinigualism in education (Vaidya, 1954), language development of Gujarati speaking Bohras (Merchant, 1961), reasoning and problem solving (Syamaia, 1961), development of understanding during childhood (Joshi, 1963), language development (Mehta, 1964), learning and awareness (Dixit, 1967), cultural background in learning process (Misra, 1968), mental and motor growth (Phatak, 1970), effect of knowledge of results upon verbal and motor learning (Thakur, 1971), language development of nursery and primary school children (Chattopadhyay, 1971), factors in concept of learning (Srivastava, 1972), anxiety, task difficulty and reinforcement of paired associate learning, social concept formation (Dattaray, 1973), thinking among science students (Vaidya, 1974), socio-economic status and progressive retardation in cognitive skills (Jachuck and Mohanty, 1974), auditory perceptual disorders and language learning (Barr, 1974), learning with fluid and crystallized intelligence test (Vibha, 1974), improving language skills in mother tongue (Dave, 1974), language test construction (Desai, 1974), children's concepts of mass, weight, and volume (Rao and Reddy, 1974), learning process and audio-visual aids (Seth, 1975), association value of

nonsense syllables and meaningful materials used in Marathi (Borude, 1975), hierarchy in cognitive learning (Dave, 1975) and logical thought development in children (Rao, 1975).

These 24 studies could be classified into three major types: developmental studies exploring the development of language, learning and concept formation, experimental studies on learning, and general studies. There are 18 studies falling into first category, 4 into the second and 2 into the third.

The first of the developmental studies was conducted by Syamala in 1961 at Banaras Hindu University. This was a comparative study of concept formation and productive thinking in two groups of children from Southern and Northern parts of India. This was conducted in line with Piaget's studies and development of concepts like dreams, thought, God, beauty, birth, cleverness, death, life, family, etc., were studied. This study revealed the regional difference in concept formation and made a significant contribution in pointing out to the environmental differences in concept formation. The next two studies were conducted on language development (Merchant, 1961) and development of understanding (Joshi, 1963). Merchant studied the language development of Gujarati speaking Bohra girls of standard IV at Bombay. A significant aspect of this study was that the investigator took into consideration the teachers of these girls and assessed simultaneously their awareness about the language development in their children. Joshi (1963) taking 730 children from 6 schools of Lucknow, studied development of understanding during childhood. It was found that development of understanding took place with age and there were sex differences in this regard. Mehta (1964) also conducted a study on language development of Gujarati children taking 800 children from 16 places in Gujarat, Saurashtra and Bombay. A major longitudinal study in this area was conducted by Phatak (1970) on mental and motor growth of Indian babies of one month to thirty months. It employed both longitudinal and cross-sectional designs for data collection. The study showed that the motor and mental growth was faster upto six months, after which the rate decreased and became steady during twelve to sixteen months. Socio-economic status and sex also showed relationship to mental and motor growth of babies. After 1970s about 12 studies were conducted on verbal and motor learning, language development, concept formation, factors influencing learning, and improving learning skills. Except three studies (Chattopadhyay, 1971; Rao, 1975; Seth, 1975), all the remaining 9 studies employed high school students as their subjects.

However, the researchers showed a great deal of varying interest in different areas. Some new areas were also explored like relationship of learning with fluid crystallized intelligence test (Vibha, 1974), hierarchy in cognitive learning (Dave, 1975), and progressive retardation in cognitive skills (Jachuck and Mohanty, 1974). There were two studies which touched psychometric problems in the field of learning. Borude (1975) examined the association value of nonsense syllables and meaningful materials by taking 900 Marathi speaking subjects for the scaling procedure and 209 in the experimental condition. Desai (1974) constructed and standardised a test for Gujarati children of the age group three to five. The language development pattern was specifically studied in terms of comprehension, sound discrimination, articulation and oral expression.

Among the four experimental studies in the area of learning, one is an experimental survey on bilingualism conducted by Vaidya at Bombay University as far back as 1954. This study aimed at determining the influence of bilingualism on learning, school achievement, language development, etc. The study was conducted on 1010 children speaking Gujarati and English. The study indicated interesting results which have far reaching implications for the language problems that one often comes across in education. The second study in this area was an experimental study of learning and awareness by Dixit (1967) from Jodhpur University. Although this study has more of psychological interest than educational interest, results have a few implications for educational psychology as it points out the role of awareness and reinforcement in verbal conditioning. A laboratory study by Rao and Reddy (1974) from Shree Venketaswara University was conducted on 432 children of age group 4 to 8 years divided equally on sex and SES. The study revealed that the children were able to understand the concepts of mass and weight with ease around the age of seven years, but understanding the concept of volume appeared at a much later stage. Barr (1974) at Patna University studied auditory perceptual disorders in children with reference to language learning. The study revealed that there were significant differences between children with learning problems and normal children. Synthetical complexity rather than auditory memory *per se* was the critical factor in correct sentence repetition.

There are two studies in the third category. Misra (1968) examined the role played by cultural factors in learning process at Banaras Hindu University. This study examined a variety of sources to determine

the role played by cultural factors in learning. The results are in the expected direction and point out the need to take into consideration the cultural factors in curriculum construction. In one study some aspects of thinking — problem solving — were explored among science students by Vaidya (1974). Problem solving behaviour showed positive relationship with grades. This study is particularly important for curriculum development for science students.

Overall review of these researches in this area suggests a significant trend of researches in various fields of learning. However, some unexplored areas can be identified. In a survey of social science research relevant to population education one of the authors of this article reviewed all the studies on concept formation. At what age different concepts related to population education can be taught to students is a major input required for curriculum design. The authors failed to identify any study that can suggest the different concepts related to population that could be taught at early ages.

In view of this, perhaps concept formation studies would be required for different regions of the country if at all some useful purposes have to be served in the curriculum development at school level in areas of national importance. A number of other practical problems along these lines have to be tackled. Concept formation in tribals seems to be one area that needs attention. Since there is environmental variation found in the development of concepts, the next logical question would be to identify the sources that are contributing to this kind of variation and explore the possibilities of the source of manipulation in order to make the developmental process fast. Such studies can only give some useful information for the curriculum development or teacher training colleges, as the role of the teacher may have to be reconstructed for the primary school level in order to enhance fast development in children.

On the whole, the studies on learning are appreciable from the theoretical as well as practical contributions of utility to the field of education, although there are still some more hidden areas that need to be explored.

MOTIVATION

There are altogether 15 studies that could be classified under this area of which 8 are Ph.D. theses, (3 in education and 5 in psychology) and 7 are project reports. All these studies are rather recent ones covering a range of only 8 years (1967-1975) and thus indicate a significant trend of growing interest in this

area of research, particularly achievement motivation. Of the 17 studies, seven are exclusively on achievement motivation mostly using the achievement motivation pictures developed by Prayag Mehta at the National Council of Educational Research and Training. Some of the project reports covered in this area have since been published or widely circulated and hence are well known.

The first doctoral study was conducted by Tamhankar (1968) on the achievement motivation of young adolescent boys at Poona University. A significant aspect of this study was the development of a scoring manual for n-achievement in Marathi language. The results are rather interesting and indicate relationships between achievement motivation and personal values, socio-economic status, intelligence, and academic performance. The second study by Rabindradas (1969) at Madras University sought to investigate the personality rigidity in relation to motivation, learning, concept formation and perception among the high school students. Chaudhary (1971) at Punjab University conducted a study to assess the relationship between achievement motivation and anxiety, intelligence, socio-economic status, and vocational aspiration. High school students were studied using the Mehta's Test of n Ach. Again by using the same test Gokulnathan (1972) took altogether a new direction in studying the achievement motivation and educational achievement in tribal and nontribal secondary school children in Assam. A significant aspect of the results is the finding favouring high need achievement level in tribal students as compared to the nontribals. Bhargava (1972) at Agra University studied 120 male subjects to find out relationship between level of aspiration and achievement motivation. The results showed that there was no correlation between the levels of aspiration and achievement motivation. The TAT cards were found to be a better measure of n Ach than the Mukerjee's Sentence Completion Test. Patthak (1974) at the Sardar Patel University studied achievement motivation and school performance of high school boys. The sample consisted of 1346 students of classes VIII, IX and X from 12 schools in Kaira district, Gujarat. The pupils studying in schools of high socio-economic and achieving status had high n Ach scores as compared to pupils studying in schools of various status combinations; n Ach showed positive relationship to school performance. One correlational study on n Ach was carried out by Agarwal at Kurukshetra University in 1974. A random sample of 500 boys and 500 girls was drawn from the high and higher secondary schools of Haryana. The variables of n Ach and SES were

found to be positively related. The girls had significantly higher n Ach than boys. The effect of sex on n Ach was found to be independent of SES. Banerjee (1974) studied development of competition and cooperation and its relationship to n Ach. The relationship between n Ach and competition was not significant. Adjustment was found to be positively related to n Ach in Hindu and tribal groups and not with Bohra groups. The researchers showed a great deal of interest in different areas of motivation. Mohan (1975) studied the development of self concept in relation to achievement motivation at adolescent level at Panjab University.

The projects in this area have also been conducted under the initiation of Prayag Mehta. Two of them are studies on n Ach in high school students (Mehta et al. 1967, Mehta, 1969) conducted with the assistance of NCERT. These two studies are related to the level of achievement motivation in high school boys at Delhi and a comparative study of the n Ach in middle class and working class. Following these studies a number of studies appeared on n Ach of high school boys by Mehta and his associates as well as a few other investigators using the n Ach cards developed by Mehta. Research in this area has grown greatly in the past few years. Some of these studies are attempting to boost up n Ach in school teachers, as well as in students by training programmes. Two studies conducted at Sardar Patel University, Vallabh Vidyanagar by Desai (1971) and Desai and Trivedi (1972) are along these lines. Both of these studies attempted to develop achievement motivation in high school boys by designing special curriculum. One project conducted under the title of 'Motivation Training for Mental Health' (Pareek and Rao, 1971) attempted to change teacher behaviour by using feedback of interaction analysis. It aimed at improving

the positive mental health of school children by bringing about such changes in teacher behaviour. Although grouped under this category, this study comes under a wave of new researches on interaction analysis which is fast developing in the area of educational social psychology. Two research projects on motivation were also carried out at the Regional College of Education, Mysore. The first research (Dave and Dave, 1972) was concerned with some organic, experimental and psycho-social correlates of risk taking in a game of pure chance. Students with high and low verbal intelligence as well as academic achievement preferred to take higher risks than the moderate group. The second study (Dave, 1973) was concerned with the comparison of Indian and Indian adaption of TAT pictures. The study revealed some interesting comparative findings about Indian TAT (NCERT) and those of American pictures.

Viewing broadly, researches on motivation in general and achievement motivation in particular seem to be developing fast, touching many new areas. While this is a welcome growth, other potent areas of motivation also deserve attention in view of the educational needs of the country. Some such areas include work-motivation of teachers and the possibilities of increasing it, motivation in the adoption of innovations like programmed learning, motivation for change in teachers in order to bring change in students, further exploration in achievement motivation including the efficacy of achievement motivation training programmes and so on. As the number of students registered for Ph.D. in Education is on increase, it can be hoped that in future, the researchers would also contribute more to explore theoretical grounds using adequate theoretical models and at the same time would be oriented towards practical problems and educational development.

ABSTRACTS : 193-272

193. AGARWAL, P. C., *A Study of the Correlates of Achievement Motivation*, Ph.D. Edu., Kur. U., 1974.

The present investigation was conducted to test the following hypotheses: (i) High SES subjects would have significantly higher achievement motivation than the middle or low SES subjects. (ii) Well adjusted students in four fields of adjustment, i.e., home, school, social, health and emotional adjustment, would have significantly higher achievement motivation as compared to poorly adjusted students. (iii) Subjects possessing the positive personality traits would have significantly higher achievement motivation than the subjects who possess the negative personality traits. (iv) Boys would have significantly higher achievement motivation as compared to girls on the above mentioned variables.

This was a correlational study. A sample of 500 boys and 500 girls was selected by random sampling technique from the high and higher secondary schools in the state of Haryana. The Socio-Economic Status Scale Questionnaire (SESSQ), the High School Personality Questionnaire (HSPQ), the Adjustment Inventory, and the Achievement Motivation Test were the tools of research used in the study.

The major findings of the study were as follows: (i) Achievement motivation and SES variables were related significantly positively with each other. (ii) The girls had significantly higher achievement motivation as compared to boys. (iii) The effect of sex on achievement motivation was found to be independent of SES. (iv) All the four adjustment factors (i.e., home, social, health and emotional, and school adjustment) were related positively but insignificantly with achievement motivation in the boys' group. (v) In case of girls, home, health and emotional adjustment were related significantly positively to achievement motivation, but social and school adjustments were related positively but insignificantly to achievement motivation. (vi) In both boys and girls groups personality factors like "strong super-ego" and "relaxed" were related significantly to achievement motivation. (vii) In general, subjects with positive personality traits like "strong super-ego", "socially bold" and "zestful" had higher achievement motivation than those with negative personality traits like weak super-ego, shy, and reflective. (viii) Girls had significantly higher achievement motivation than boys on SES, adjustment and personality factors.

*194. BABU, N., *A Comparative Study of the Personality Factors of High Intelligence — High Creative Thinkers and High Intelligence — Low Creative Thinkers in Secondary Schools*, Ph.D. Edu., Ker. U., 1977.

The study was designed to compare the personality factor structure of two extreme categories of creative thinkers, namely, high intelligence — high creative thinkers (HI — HC) and high intelligence — low creative thinkers (HI — LC) in secondary schools of Kerala.

The basal sample of 4982 subjects was selected, giving proportionate representation to relevant factors like sex, rural-urban residence and the three educational levels. Two tests of intelligence, one verbal and the other nonverbal, were administered to this sample and on the basis of the results, a sample of 614 high intelligence (HI) subjects was drawn. These subjects were administered a standardized creativity test in Malayalam (patterned after the Guilford's Test of Creative Thinking). The mean and standard deviation of the creativity test scores for this group were worked out and used for identifying the high creative and low creative subjects within the HI group. Classification yielded 128 HI — HC subjects and 159 HI — LC subjects. The HI — HC and HI — LC groups were compared on the fourteen personality variables, viz., self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, withdrawing tendencies (freedom form), nervous symptoms (freedom form), family relations, school relations, community relations, general anxiety and test anxiety. t test and factor analysis were carried out.

The findings of the study were as follows: (i) Among the fourteen variables subjected to investigation, eight variables, viz., self-reliance, withdrawing tendencies (freedom form), nervous symptoms (freedom form), social standards, anti-social tendencies (freedom form), family relations, school relations and general anxiety discriminated significantly between the two groups. (ii) The factors identified for the HI — HC group (with respective percentage variance accounted for) were (a) Non-Anxious Disposition (26.54), (b) Group Adjustment (21.13), (c) Individual Adjustment (20.86), (d) Social Conformity (11.14), (e) Performance Anxiety (7.94) and (f) Freedom Orientation (12.40). (iii) The factors identified for the HI — LC group (with respective percentage variance accounted for) were (a) Self-

Adjustment (19.46), (b) Social Adjustment (28.14), (c) Social Anxiety (12.63), (d) Personal Adjustment (16.98), (e) Social Disposition (10.22) and (f) Total Adjustment (12.53). (iv) Comparison of the factor structures for the HI — HC and HI — LC groups revealed that, for the two groups, there were four factors that were comparable but not identical. (v) It was indicated that the dissimilarity of the factor patterns for the HI — HC and HI — LC groups was caused by the presence of two factors in each of the groups (Social Conformity and Freedom Orientation for the HI — HC group and Social Disposition and Total Adjustment for the HI — LC group), for which comparable factors did not exist in the other group.

195. *BANERJEE, D., Development of Cooperative and Competitive Behaviour and its Relationship with Need for Achievement (n Ach), Ph.D. Psy., Udaipur, U., 1974.*

The present investigation intended to study the behavioural pattern of children in terms of achievement motivation and cooperative and competitive behaviour. The specific objectives were: (i) to study the development of cooperation and competition in pre-adolescent children; (ii) to study n Ach of pre-adolescent children and the relationship between n Ach and cooperative and competitive behaviour; (iii) to study the subcultural differences in cooperative and competitive behaviour and n Ach; and (iv) to study the relationship of cooperative and competitive behaviour as dependent variables with some independent variables like, personal background (age and sex), achievement motivation and some personality variables (dependency, classroom trust and adjustment).

Data were collected from 454 subjects from Delhi and Udaipur. Subjects were selected from classes IV, VI and VIII of different primary and secondary schools. The sample consisted of three subgroups of communities — Hindu, Bohra and Tribe. The research tools used were (i) the Maximizing Difference Game; (ii) the Mehta's TAT picture cards; (iii) the Pre-adolescent Adjustment Scale; (iv) the Pre-adolescent Dependency Scale (Form B); (v) the Pre-adolescent Classroom Trust Schedule; and (vi) the Kuppaswamy's SES Scale.

Findings of the study revealed that (i) competition was found to increase with age in every subgroup of communities; (ii) role of sex was found to be not significant in cooperative and competitive behaviour; (iii) effects of homogenous and heterogenous groups were not found significant in cooperative and competitive behaviour; (iv) Bohras were found to show least

cooperative behaviour (high in competitive behaviour) among all other communities, and Tribals showed the highest cooperative behaviour (lowest competition behaviour) in comparison to others; (v) the relationship between n Ach and competition was very low and not significant; (vi) Bohras were more independent than Tribal and Hindu students and all the three communities showed more or less the same degree of classroom trust; (vii) Hindus and Bohras showed similar trend in adjustment while Tribals were found to be less adjusted as compared to Hindus and Bohras; (viii) adjustment was found to be significantly and positively related with n Ach in Hindu and Tribal groups; and (ix) relationships between different personality dimensions and game behaviour were found to be low and insignificant for different communities.

*196. *BANSAL, J. P., A Study of Need Differences among Urban High School Boys and Girls at Different Levels of General Intelligence and Socio-Economic Status, Ph.D. Edu., Kur. U., 1977.*

The purpose of the study was to find the differences in the needs of achievement, deference, order, exhibition, autonomy, affiliation, interception, succorance, dominance, nurturance, change, endurance, heterosexuality and aggression among urban high school boys and girls of high, middle and low levels of general intelligence and socio-economic status.

The sample consisted of 360 students. The tools used were: (i) the Jalota's Group General Mental Ability Test; (ii) the Jalota's Socio-Economic Status Questionnaire; and (iii) the Edward's Personal Preference Schedule (E.P.P.S.) adapted in Hindi. Three way factorial design of analysis of variance (2x3x3) was employed to see the effect of sex, general intelligence and SES on the dependent variables, viz., fifteen different needs.

The major findings were: (i) There was no significant difference in the needs of urban high school boys and girls, except in 'Affiliation' and 'Aggression' when averaged over the different levels of general intelligence and socio-economic status. The urban high school boys were significantly higher on the scales of 'n Affiliation' and 'n Aggression'. (ii) Interaction between sex and general intelligence was significant only in the case of 'n Intraception'. The differences of 'n Intraception' mean scores of urban high school boys at high, middle and low levels of general intelligence were significantly different from those of girls of the same category. (iii) The urban high school students belonging to middle socio-economic status were

found to be high on the scale of 'n Change' in comparison to the students of low socio-economic status.

197. BARR, D. F., *A Study of Auditory Perceptual Disorders in Children with reference to Language Learning, Ph.D. Psy., Pat. U., 1974.*

The major objectives of the study were: (i) to study auditory perceptual disorders in children with reference to language learning, and (ii) to focus on the listening experiences of children which provided the foundation for language acquisition.

In this experimental study thirty children with learning problems formed the experimental group and thirty normal children comprised the control group. Four standardised tests, namely, the Wepman Test of Auditory Discrimination, the Rosner Auditory Analysis Test, The Roswell-Chall Auditory Blending Test and the Binet Sentence Memory Test, were administered. The experimental group of thirty children were further subdivided into three smaller groups according to age. Data were analysed by means of t test.

The study revealed that (i) statistically significant differences existed between the children with learning problems and the normal control group on the four standardised tests; and (ii) syntactical complexity rather than auditory memory *per se* was the critical factor in correct sentence repetition.

198. BHARGAVA, V. P., *A Study of Level of Aspiration and Need for Achievement, Ph.D. Psy., Agra U., 1972.*

The present study intended to find out the relationship between levels of aspiration and achievement motivation. The objectives were: (i) to know the functional relationship as it existed between the levels of aspiration and achievement motivation in Indian students; (ii) to know the effect of experimentally induced conditions (relaxed, neutral and achievement oriented) and outcome conditions (induced feelings of success and failure) on levels of aspiration (LOA) scores and achievement motivation scores of the Indian students; (iii) to know the effect of varying conditions on goal discrepancy scores (GDS) and achievement motivation scores in respect of Indian students; (iv) to measure the n Ach of the Indian students by McClelland's TAT Picture Cards and Mukerjee's Sentence Completion Test (SCT); and (v) to obtain information regarding LOA and achievement motivation in Indian students and, if possible, to attempt a comparison with the similar aspect of behaviour in respect of the western students.

The sample consisted of 120 male subjects in the age group of seventeen to twentytwo years studying in the postmetric classes in the colleges at Agra. They were matched against age and achievement and put to six conditions. The study had a 3x2 factorial design. The following tools and techniques were administered to the sample: (i) The Code Experiment and GDS; (ii) The McClelland's TAT Picture Cards; (iii) The Mukerjee's Sentence Completion Test; and (iv) questionnaire for measuring levels of aspiration following Clark, Teevan and Ricciuti.

The findings revealed that (i) there was no correlation between the level of aspiration and achievement motivation scores; there was extremely low correlation between the n Ach scores obtained on TAT cards and SCT; TAT cards were found to be a better measure of achievement motivation than SCT; (ii) the different experimental conditions (relaxed, neutral and achievement oriented) seemed to create no significant difference in the GDS of the subjects, whereas outcome conditions of success and failure created the significant difference; in the n Ach behaviour measured through TAT cards, there was significant difference between the scores of relaxed, neutral and achievement oriented groups and there was no significant difference of scores between the success and failure groups, while through SCT, the mean scores had no significant difference on the dimensions; (iii) the hope of success (HOS) group had highest value of positive GDS; the middle and the lowest negative GDS and fear of failure (FOF) groups were similar in mean GDS having lower magnitude; on the TAT the mean scores of middle group were lower than those of HOS and FOF groups with no significant difference; while on SCT there was highly significant difference in the mean scores of n Ach of the subjects belonging to the HOS, FOF and middle groups; (iv) the Indian students were goal oriented, having realistic approach to attainment; and (v) the Americans and the Indians reflected achievement imageries and other subcategories alike, excepting the Nup, difference on the Bw — Bp and affective state and anticipatory goal (Ga+ and Ca-; G+ and G-).

199. BHATT, K. K., *Adjustment Problems of the Under-Achievers, University School of Psy., Edu. and Phil., Guj. U., 1971. (Guj. U. financed)*

The study aimed at finding out the adjustment problems of the overachievers and underachievers. The study was an attempt to explore the motivating forces of the underachievers, with the help of a semi-projec-

tive technique, the Incomplete Sentences Blank (ISB) adapted from Rotter and Rofferty. The study mainly concentrated on the adjustment problems of the underachievers as studied through their responses on the ISB. It was hypothesised that the reasons underlying underachievement would be more of an external or environmental nature, while those underlying overachievement would be more of an inter-personal and emotional nature.

The sample consisted of 100 overachievers and 106 underachievers of both sexes. They were selected from six mixed secondary schools located in the various parts of Ahmedabad. They were administered the Revised Desai-Bhatt Group Intelligence Test. After separating the overachievers and underachievers from the total group, they were administered the Gujarati Adaptation of the ISB. The t test was applied to study the differences in the mean ISB scores of the overachievers and underachievers.

The findings revealed that (i) there was a significant difference between the overachievers and underachievers in the performance on the ISB; (ii) the original difference between the overachievers and underachievers was also sustained when studied at the subgroup level of boys and girls; (iii) on the ISB, the underachievers showed a relatively better level of adjustment than the overachievers; this was true for the total sample as well as for boys and girls; and (v) content analysis revealed that the difference in the emotional sensitivity of the overachievers and underachievers was a contributory factor for this discrepancy.

*200. BHATTACHARYA, D., *Learning Disabilities in Algebra — Diagnosis and Prevention*, Ph.D. Edu., Visva Bharathi U., 1977.

The important objectives of the study were (i) to diagnose the detailed patterns of disabilities of the students in specific areas of algebra with the help of specially designed tools; and (ii) to try out, experimentally, the teaching methods which would prevent development of learning disabilities in those areas.

The stratified sample consisted of slow-learners, both boys and girls of class VIII, numbering 238 in case of 'addition' and 252 in case of 'multiplication'. Diagnostic tests in 'addition' and in 'multiplication' were developed. The test-retest reliability coefficients for tests in 'addition' and 'multiplication' were 0.96 and 0.94 respectively. The extent of disabilities found by structured interview of twenty percent randomly selected students was related with the disabilities found

by tests. The coefficients were 0.94 and 0.95 respectively in 'addition' and 'multiplication'. The patterns of disabilities were found to be fifty-nine in case of 'addition' and thirty-seven in case of 'multiplication'. The preventive measures developed and which involved teaching through audio-visual methods, were tried out by having control groups and experimental groups in four different schools. The same teacher taught the four groups and the developed diagnostic tools were used as post-tests

The developed audio-visual method of teaching was found to be effective. It was noticed that it also helped in motivation and retention.

201. BISHT, G. S., *A Study of the Level of Educational Aspirations in Relation to Socio-Economic Condition and Educational Attainment*, Ph.D. Edu., Agra U., 1972.

The main objectives of the present study were: (i) to determine the different factors which influenced the level of educational aspirations; (ii) to compare the level of educational aspiration among urban, rural and English medium school adolescents; (iii) to determine whether the educational aspiration was higher in adolescents belonging to low socio-economic status or those belonging to high socio-economic status; and (iv) to determine whether the level of educational aspiration was higher in adolescents of low academic achievement or those having high academic achievement.

The sample consisted of 100 students (fifty urban and fifty rural) selected from twenty schools (twelve urban and eight rural). The following tools were administered to the sample, namely, the Kuppuswamy's Socio-Economic Status Scale and a questionnaire developed for the purpose of study. The school examination marks were taken to represent the attainment level.

The study revealed that (i) size of the family, educational facilities and recreational facilities were found to be influencing educational aspirations; (ii) position of the child and hobbies were not having any significant influence on educational aspiration; (iii) parent's choice influenced children's selection of a job; professional jobs were preferred by majority; (iv) parental education and income were found to have significant influence on educational aspiration; (v) a positive relationship was found to exist between attainment and the level of educational aspiration; (vi) urban boys had a higher educational aspiration than rural boys; (vii) boys studying in English medium schools had a

higher educational aspiration than the boys studying in non-English medium schools.

202. *BORUDE, R. R., A Psychometric study of various Techniques of Measuring Association Value of Nonsense Syllables and Meaningful Material used with Marathi Speaking Subjects, Ph.D. Psy., Mar. U., 1975.*

The purpose of this normative-cum-empirical study was to find out the relative effectiveness and sensitiveness of different measures of scaling verbal items, i.e., nonsense syllables in the form of three letter combinations and certain meaningful three letter words.

Eight measures were used for measuring nonsense syllables and nine measures for the words. The obtained norms were used in different learning situations. A set of seven experiments was performed. A sample of 900 subjects was used in the scaling procedure and 209 in the experiments.

It was observed that (i) only one common attachment for all the 8/9 tests was revealed since the residual matrix did not show reasonable correlation; magnitude of factor loadings gave importance of individual tests in relation to the remaining tests; (ii) a single comprehensive test might not be possible to devise since there was only one factor extracted; (iii) some phonetic aspects and certain structures of letters were found to be more favourable than others in terms of their overall scale values; this showed that the proportionate frequency of occurrence of letters at initial and final locations in the nonsense syllables, nature of their combinations were important variables in the estimation of the scale values; (iv) the consistent low scale values in emotionality ratings indicated that this measure was not a good measuring device for nonsense syllables; (v) the one single factor was thought to be of some 'linguistic' nature which brought all the tests together under one common factor; and (vi) in case of nonsense syllables all the eight tests were equally important and it was very difficult to choose effect of one from the remaining.

- *203. *CHATTERJEE, M. K., A Study of Imagery as a Mediator in Instruction, Ph.D. Arts (Edu.), Cal. U., 1978.*

This research was designed to study the mediational role of imagery on the learning of connected discourse in a classroom situation. The hypotheses of the study were: (i) the high version using high imagery — concrete words would yield better result in comparison to the control version; (ii) both high and

control versions would yield better learning output in comparison to the low version using low imagery — concrete words; and (iii) high imagers would harvest better from the high version than the low imagers, but no such differentiation would be in case of the control and low versions.

For the purpose of the study a passage from the history textbook of class IX was selected and two alternative versions (high and low) of this passage were prepared, one by substituting known high imagery — concrete words and another by substituting known low imagery — concrete words in the identical slots of the basic passage. For the standardization of words' familiarity, imagery and concreteness were rated by students of this grade. The factor of intelligence, previous knowledge of history, sex and age were partialled out by using a history achievement test developed for the purpose, the Cattell's Culture Fair Intelligence Test, and by taking equal number of boys and girls in each group of subjects, age range being 13-15 years. The experimental sample contained 216 pupils divided equally into three groups equivalent with respect to imagery ability and equally divided as to sex. Each group was further sub-grouped into three equal groups of high, average and low imagers using the adapted version of the Vividness of Visual Imagery Questionnaire. These nine groups were, however, equivalent with respect to intelligence and achievement in history as revealed by the one-way analysis of variance with the respective scores. The design of the study was essentially to try three types of materials (the basic passage and two alternative versions, high and low) on the three groups of pupils having high, average and low imagery ability. Two-way analysis of variance and t test were used for testing the hypotheses.

The following were the results of the study: (i) Learning performance of the pupils was better for high version of the passage in comparison to the control and the low versions of the passage. (ii) Control material did not show any significant superiority over the low version with respect to the learning performance of the pupils. (iii) For the low imagers the imagery context was found to be irrelevant.

- *204. *CHATTERJEE, R. G., Development of the Concept of Time in Children, Dept. of Psy., Cal. U., 1973. (NCERT financed)*

The objective of the project was to show the rate of development of the concept of time in accordance with the different phases from the early to the late childhood and to locate a transition, if any, when the

children can be considered as being capable of achieving the true notion of temporal estimation.

The study was conducted on the basis of an interview schedule. It was prepared under five sub-heads : (a) concerning self, (b) concerning parents, (c) notion of time by clock, (d) concerning peers, and (e) historical time. There were 25 items for each of (a) and (b), 30 items for (c) and 20 items for (d). This schedule was presented to a group of experts, consisting of ten individuals to evaluate the appropriateness, ambiguity of the items and the like relating to the relevance of the items. On the basis of their opinion, the final selection consisted of 20 items each for (a) and (b), 28 items for (c), and 15 items for (d) and (e). The present study was completed in phases, viz., pre-pilot study and the final study. Two hundred and forty children were drawn from eight different schools, four boys schools and four girls schools, each having 30 children.

It was found that the development of the notion of temporal estimation in children is a very slow and gradual process having its transitional point at the age level of 7-8 years and above. The true concept, however, develops around the age level of 10 years in both boys and girls alike. Moreover, this notion of estimation is evidently dependent upon cues of personal involvement.

205. *CHATTOPADHYAY, S. K., The Language Development of Nursery and Primary School Children, D. Phil. Psy., Cal. U., 1971.*

The objectives were to find out the developmental problems relating to nine different aspects of language skill of nursery and primary school children of West Bengal. Efforts were also made to know whether differences due to rural and urban areas and differences due to sex had any impact on the development of language skill.

The sample consisted of 600 children, in the age range of four to ten years, belonging to nursery and primary schools, situated in rural and urban areas of West Bengal. The criteria for selecting the subjects for the study were intelligence and physical fitness. Out of the 600 children, 300 were chosen from rural areas and 300 from urban areas. Material used in the study consisted of Language Development Items (LDI) prepared by the investigator. The LDI had items corresponding to nine different aspects of language skills, namely, skill in hand writing, skill in reading, immediate span of verbal consciousness, mean length of verbal response, sense of directional language,

ages, sense of language regarding simple arithmetic, nature of sentence, story telling capacity through pictures, and sense of language regarding causal relation.

The findings were as follows : (i) The nine aspects of language skill included in the study had a close relationship with grade levels as the scores on LDI increased consistently with increase in grade. (ii) It could be stated that language skill was directly related to age and hence to maturation. (iii) In the general trend of gradual development from the lowest grade (grade I) to the highest one (grade VI), it was found that development in grade II in comparison to grade I as well as in grade VI in comparison to grade V was not so much pronounced in some of the language aspects. (iv) Language development in grade V was found much accelerated in comparison to grade IV. (v) It was found that girls did not excel boys in most of the grades; and the differences in scores due to difference in sex were not significant. (vi) Urban children were in a better position than the rural ones so far as language development was concerned. (vii) Regarding language development, children of educated parents were better than the children of less educated ones.

- *206. *CHOKSHI, A. J., Effects of Psychological Inputs on the Academic Performance of the Primary School Children, Ph.D. Edu., MSU, 1977.*

The main objectives of the study were : (i) to develop a psychological education input model for primary school children; (ii) to study the effects of psychological education inputs on the academic performance of the pupils; and (iii) to experimentally study the effectiveness of the psychological education inputs on certain psychological traits constituting the affective domain for development of the pupils.

A conceptual model of psychological education inputs was evolved by studying and analysing the literature on attempts made for developing achievement motivation and other psychological traits, keeping in view the age group to which the present model was to be adopted. The effectiveness of the study was studied under two phases. In the first phase the experiment was tried out for one month and the input model was refined. The final experiment was conducted for one full term of four months. Sample for the experiment consisted of eighty boys studying in standard VII of a municipal primary school in Baroda. The sample was divided into two groups matched on intelligence. Content inputs were controlled in both the groups. A pre-test, a post test and weekly periodical tests in each subject were administered to both the groups simultaneously.

It was found that the psychological input model improved the academic performance of the pupils significantly. The psychological education input programme increased the n Ach level of pupils significantly. It also affected the adjustment and classroom trust of the pupils positively. It increased the anxiety level of pupils. The psychological education input programme increased the initiative level of pupils. This programme also increased the activity level of pupils. It affected social relationships among pupils positively. The pupils became more realistic when they became aware of their abilities. At the post-performance level, the pupils manifested more moderate risk taking behaviour. It was observed that the model was effective from various angles.

*207. CHRISTIAN, J. A., *A Study of Fear of Failure, Hope of Success, Achievement Motivation, Anxiety and Concern in the Girl Students of Sardar Patel University in Relation to Their Socio-Economic Status and Performance, Ph.D. Edu., SPU, 1977.*

The objectives of the study were : (i) to find out the level of the components of Need Achievement, Fear of Failure, Anxiety, Concern and Socio-Economic Status of the girl students of Sardar Patel University; (ii) to study the level of Need Achievement, Fear of Failure and Anxiety according to Performance, Age and Streams of the subjects; (iii) to study the correlations of Need Achievement, Fear of Failure, Hope of Success, Anxiety, Concern, Performance and Socio-Economic Status; and (iv) to study the effect of the various factors aforementioned on Need Achievement.

The sample consisted of 500 girl students of the Sardar Patel University. The tools used were the Pareek and Trivedi Socio-Economic Status Scale for rural sample, the Kuppaswamy's Socio-Economic Status Scale for urban sample, the McClelland's Thematic Apperception Test, the Birney's Thematic Apperception Test, the Badami's Self-Analysis Scale, and the Cantril's Self-Anchoring Striving Scale.

The main findings of the study were : (i) the Need Achievement (n Ach) had no relation with age and anxiety; (ii) there was a significant positive correlation between n Ach and students' academic performance; (iii) there was a significant negative correlation between n Ach and fear of failure; (iv) there was greater hope of success feelings than fear of failure feelings in achievement situations; (v) there was a significant positive correlation between the fear of failure and hope of success; (vi) anxiety had no relation with age; (vii) there was a significant positive correlation between

anxiety and hope of success, (viii) there were more personal fears than hopes; (ix) there was high concern for the nation's economic, social and political situations and international situations; (x) there was a significant negative correlation between performance and anxiety, and performance and hope of success; and (xi) there was a significant positive correlation between performance and fear of failure.

*208. DASGUPTA, S., *Creative Artists in the Field of Bengali Literature : Their Parental Relationship and a Few Significant Personality Correlates, Ph.D. Edu., Pat. U., 1977.*

The study aimed at studying the parental relationship and some personality correlates of creative artists of Bengali literature.

The enquiry was conducted with an experimental group of fifty men and twentyfive women teachers in the age group between thirty and forty years, and who published poems, short stories, novels and dramas which were considered to possess significant literary excellence or originality by five literary critics by a majority of votes. The control group was of men and women graduate teachers who did not manifest literary creativity in the aforesaid fields. The subjects' reports of parental love and aggression experienced in their childhood was obtained by using the J. C. Dasgupta's FLFA and MLMA, a standardized inventory. Three personality correlates, namely, conformity — nonconformity, involvement — noninvolvement, and psychotic and neurotic traits and tendencies, were explored and assessed, the tools used for the first two being inventories developed by the investigator and for the third being the J. C. Dasgupta's inventory revised by the Psychology Department of Calcutta University.

The study revealed the following : (i) Compared to the control group, the experimental group (literary artists—men and women) suffered from far more parental relationship, and were significantly more non-involved and more nonconformist in their beliefs and attitudes. (ii) The psychotic and neurotic tendencies in the experimental group were slightly greater, but the difference was not statistically significant.

209. DATTARAY, P., *An Investigation into the Behaviour of Adolescent in Attaining Some Social Concepts of the Higher Secondary Syllabus of West Bengal, Ph.D. Edu., Del. U., 1973.*

The main purpose was to investigate the nature of pupils' comprehension of social concepts presented

to them in the classroom and to determine if it was possible to delineate the locus of development of a specific concept in the thinking process of the pupils. The following hypotheses were formulated: (i) students in the rural schools of West Bengal would over the period of one academic year change their understanding of the meaning of social concepts taught to them by teachers using the prevalent teaching procedure; (ii) students in the rural schools of West Bengal would conserve the concepts of social concepts presented to them by teachers using the prevalent teaching procedure; (iii) students in the rural schools of West Bengal would demonstrate a thinking process consistent with the Piagetian models of thinking in their conservation of social concepts presented to them in the prevalent teaching procedure; (iv) students in rural schools of West Bengal would demonstrate the applicability of the Piagetian models of thinking as one of the loci of the development of social concepts as taught over one academic year in the prevalent teaching procedure.

All the pupils of class IX of the eight schools, who had offered the course of elementary civics and economics in the arts stream, were taken as the subjects for the investigation. The total number of subjects amounted to 139 pupils. The data were collected by administering the Semantic Differential Test and five paper-pencil tests. An interview schedule was also employed to find out the sources of information about the concepts other than the classroom and also to find out if pupils had ever noticed their own thinking process while attaining the concepts. The marks obtained by all the subjects in the paper of civics, in the two school examinations, half-yearly and annual, were collected from the school records.

The following were the major findings of this investigation: (i) The first hypothesis was retained in view of the data on the Semantic Differential Test. (ii) The second hypothesis was also retained. (iii) The data on the tests and the interviews showed a rudimentary combinatorial system, when the experimental level was strong or when the nature of the concept was open; when these two criteria were absent, there were no combinatorial activity; but this combinatorial activity was not supported by the I.N.R.C. group structure, and, therefore, fell far short of the Piagetian model; therefore the third hypothesis could not be retained; (iv) the fourth hypothesis was rejected for want of adequate support of empirical evidence of the study.

210. DAVE, P. N., *A Comparative Study of the Validity, Reliability and Cue Values of Two*

Sets of TAT Pictures — American and Indian, RCE, Mysore, 1973.

The study was undertaken to investigate the validity, reliability and cue values of the American and Indian sets of TAT Pictures. The hypotheses tested were: (i) the frequencies of stories containing achievement imageries aroused by the NCERT set would not differ from those aroused by the American set; (ii) the frequencies of stories containing achievement imageries aroused in the experimental condition I would not differ from those aroused in the experimental condition II by either set of pictures; (iii) age level, mother tongue, cue values, and sex would not be having any significant effect upon the frequencies of stories containing achievement imageries aroused by the Indian set and those aroused by the American set; and (iv) a greater number of frequencies of stories containing achievement imageries would be aroused in boys than in girls by either set.

The study was completed in two phases. The sample for the first phase comprised 106 male and female science graduates admitted to the one year B.Ed. course during 1971-72 at the Regional College of Education, Mysore. The sample for the second phase comprised 119 children studying in standards V, VIII, and IX selected randomly. The pictures from each set with similar cues were selected and presented in a sequence. Children were asked to write stories in the mother tongue or in English.

The findings revealed that (i) the total as well as the picturewise (except the picture No. 2) imageries aroused by the American set were larger than those aroused by the Indian set; (ii) the American set contained better cue value than the Indian set; (iii) sequence favouring the Indian set helped arouse more frequencies of achievement imageries; (iv) increase in age level was accompanied by increase in achievement imageries aroused by American set; (v) those who responded in Kannada produced more number of stories with n Ach than those who responded in English; (vi) the American set aroused more imageries in children who wrote stories in English than did the Indian set, while no such difference was evident for stories written in Kannada; (vii) the first mean rank in all standards was held by the American picture and the boys wrote more stories containing achievement imageries in response to the American set than in response to the Indian set; and (viii) differences existed between the frequencies of stories written by the girls in response to the American and the Indian sets.

211. DAVE, P. N., *Improving Language Skills in the Mother-tongue, CIIL (in collaboration with RCE), Mysore, 1974.*

The main objectives of the project were: (i) to develop and experimentally test the effectiveness of a Bridge Course of 100 hours with respect to five language skills, i.e., listening comprehension (LC), listening and note making competence (LCN), reading comprehension (RC), guided composition (GC) and epitomising (EP); (ii) to construct a test that could be used as a pre and post test for evaluating the attainment in the above mentioned five skills of college entrants who opt for Kannada as the medium of instruction; (iii) to investigate the relationship between the content input, the process and the learning outcomes in the language learning situation; (iv) to examine the possibility of existence of an independent hierarchical structure in language attainment; (v) to study the relationship between the language skills and some other variables as sex, parental education, occupation and income; and (vi) to develop a Modified Version of Curriculum Schema (MVCS) that could be applied to analyse both language as well as content learning. The study hypothesised (i) positive relationship between the Bridge Course, language skills and academic performance, (ii) hierarchy in language skills, and (iii) influence of other variables such as sex and parental background, on language skills.

The sample of the study consisted of 730 pre-university students selected from different colleges of Bangalore, Mysore, Dharwar and Bijapur. They were administered a specially prepared pretest for determining their initial level of attainment in language skills. Majority of the subjects studied through Kannada. A selected group of teachers from colleges was given training in administering the test and carrying out the Bridge Course. These teachers were engaged in running the Bridge Course with eightyfour students from colleges of Mysore and Bijapur on a voluntary basis. These students who formed the experimental group, were given an intensive training in language skills. The control group was randomly selected from among those who did not undergo training. At the end of the course the same test was administered as the post test to both experimental and control groups. Data were statistically analysed by means of ANOVA, ANCOVA, ANOVARA (Friedman), t test and chi-square test.

The study arrived at the following conclusions: (i) The college entrants in the pre-university courses who were given intensive training through the Bridge

Course showed greater improvement in their language skills and academic performance than those who were not. (ii) Differences existed between the language skills of the students coming from families having differential parental education, occupation and income. (iv) The test and the subtests possessed a substantial extent of divergent validity and a fair degree of reliability. (v) Language skills were hierarchically related. Their rank order was as follows: EP > LC > GC > LNC > RC.

212. DAVE, P. N., *Hierarchy in Cognitive Learning, RCE, Mysore, 1975. (USAID financed)*

Two main purposes of the project were: (i) to evaluate the effectiveness of the Physics Resource Material (PRM) prepared by the staff of the Physics Department, Regional College of Education, Mysore; and (ii) to assess the feasibility of the Advanced Curriculum Model of Cognitive Learning (ACMCL). The study hypothesised (i) cumulative hierarchy between the levels of knowledge (K), understanding (U) and application (A); (ii) existence of hierarchy of Expected Behavioural Outcomes (EBOs) within the hierarchy of objectives of learning; and (iii) efficacy of PRM in terms of EBOs in comparison with usual text and methods.

Fortynine students were included in each of the experimental and the control groups selected from standards VIII, IX and X of the central, state government and private schools of Andhra, Kerala, Madras and Mysore. The total sample comprised 2430 students who were given a pretest, the items of which were classified into objectives as well as behavioural categories. The experimental groups were taught one of the units such as air pressure, work, power and energy, statics, hydrostatics and simple machines by the teachers who were intensively trained in the use of PRM for a week. The control groups were taught by the regular teachers with the help of usual text and methods. After completion of teaching both the groups were simultaneously given a post-test consisting of thirty items which were carefully framed and classified into categories under study by the subject and education experts. Since the distribution of data by and large was not normal and the theoretical assumptions of the study were also not compatible with the concept of normality, a series of non-parametric tests were used to test the tenability of the hypotheses.

The following were some of the significant findings: (i) While the overall data supported that K, U and A were hierarchically related, the same data, partitioned conditionwise, did not support that assump-

tion for the control group, thereby indicating a difference between the process hierarchy (developmental goals) and the product hierarchy (developed goals) and also the need for making conscious attempts at developing them. (ii) There was more consistency in the performance of the experimental group with respect to different units than it was for the control group, indicating some sort of relationship existing between content and hierarchy. (iii) Excepting the Malayalam language group, the data for the other languages lent substantial support to the cumulative structure of hierarchy. (iv) The students taught with the help of the PRM using both its content and methods showed greater acquisition of knowledge with respect to all the five units, better understanding with respect to two units, and better abilities of application for solving problems in physics with respect to one unit, than those taught by usual text and methods. (v) It appeared that mental processes under K formed a predicted structure, whereas under U and A they did not form a particular pattern, but formed different clusters within each category, indicating either the peculiar nature of the content or weakness of the measuring tool.

213. DAVE, P. N. and DAVE, J. P., *Some Organismic, Experimental and Psycho-Social Correlates of Risk-taking in a Game of Pure Chance*, RCE, Mysore, 1972.

The objective of the experiment was to test the following hypothesis: In a game of pure chance, differences in risk-taking do not exist between groups formed on the basis of (i) organismic variables (age and sex), (ii) experimental conditions, i.e., (a) verbal reward, (b) verbal punishment, (c) both reward and punishment, and (d) none, (iii) psychological variables (verbal intelligence, nonverbal intelligence, motivation, academic achievement, athletic achievement and co-curricular achievement), and (iv) social variables (social perception, parental income, education, occupation, and ordinal positions of birth).

The sample consisted of 131 student teachers in first, second, third, and fourth year courses in technology, science, commerce and English in teacher education at Regional College of Education, Mysore. Their data on organismic and psycho-social factors were collected by administering a complex selection battery at the time of admission. The battery comprised a sub-battery of content tests (physics, chemistry, biology, mathematics), aptitude tests in technology and commerce, general English, and special English, the Babu Verbal Intelligence Test, the Nafde Nonverbal Test of Intelligence, and the Dave and Anand

General Attitude Scale. The data on social perception were collected by conducting a sociometric test. A simple card game having constant and uniform incentive values ($I + -$) and subjective probabilities of success and failure was devised by the investigators to study the risk-taking pattern of subjects. The subjects were divided into three groups — high, middle, and low. The data were analysed with the help of F and t tests.

The findings deduced were as follows: (i) In a game of pure chance, individuals generally preferred to the chances (risks) of moderate probabilities, i.e., around the chance 5/10; (ii) students with high and low verbal intelligence as well as academic achievement preferred to take higher risks than the moderate group; and (iii) all the other variables were not related to risk-taking.

214. DEO, P., *Zeigarnik Effect in Relation to Ability, Sex, Interest and Familiarity with the Task*, Dept. of Edu., Pan. U., 1968.

The purpose of the investigation was to study if recall of tasks was related to specific ability of the individual for a particular task, sex, interest felt in doing the task, and familiarity with the task.

The sample consisted of fiftyfour subjects consisting of thirtyone males and twentythree females. Twenty tasks were selected out of which ten were numerical (N) and the other ten nonnumerical performance tasks (P). The N-tasks were, addition, subtraction, multiplication, division, squareroot, cuberoot, percentage, average, fraction, and number series. The P-tasks were, one card from Koh's Block design, pyramid puzzle, crepe paper work, plasticene work, drawing and painting, writing an exciting experience in life, estimating number of grains in a container, design with desks, estimation of tune, and a design from Alexander's Passalong test. The experiment was done individually. Interruption was introduced when the subject was about half-way through the task. Interest and familiarity scores were obtained by rankings by the subject when he was shown all the task. The statistical measures used were percentage, F ratio, t ratio and biserial correlation.

The major findings of the study were: (i) recall was not related significantly to interruption of tasks; (ii) recall of N-tasks had positive and low correlation with numerical ability and was higher than the correlation between recall of P-tasks and numerical ability; (iii) no sex differences were observed with respect to recall of tasks; (iv) the performance tasks were

found to be more interesting than N-tasks irrespective of the numerical ability; (v) interest in the task did not favour recall; (vi) recall of tasks was strongly favoured by the familiarity with the task; and (vii) memory of tasks, in general, was superior for subjects with high numerical ability as compared to the other groups.

215. *DESAI, H. G., The Attitudes to Mathematics of High School Students of Saurashtra — A Field Study, Dept. of Edu., Sau. U., 1973. (UGC financed)*

The main objective was to construct an attitude scale and to measure the attitude towards mathematics of the high school pupils of Saurashtra, in order to know if the students varied in their attitude with respect to sex, grade and the area they lived in.

The attitude scale was constructed in Gujarati following the approach of Thurstone and Chave. Twenty attitudinal statements were finally arrived at, and these formed the second part of the instrument, whereas the first part included queries about name, age, sex, name of the school, grade, etc., regarding the subject. The split-half and test-retest reliabilities were found to be 0.86 and 0.74 respectively. The validity of the attitude scale was determined on the basis of teachers' ratings of the pupils' attitudes. The validity coefficient thus obtained was 0.66. A stratified proportional random sample was selected for the investigation on the basis of number and types of schools in different districts of Saurashtra. The sample of 3505 pupils consisted of 2280 boys and 1225 girls, 1821 from rural areas and 1684 from urban areas. For analysing data, mean and SD were calculated and significance test was applied.

The major findings of the investigation were as follows: (i) the pupils with favourable attitude to mathematics preferred to offer it at the S.S.C. Examination; (ii) the attitude of boys became more favourable as they moved from grade VIII to grade IX; their attitude was less favourable in grade X than in grade IX; (iii) girls in grade X had a more favourable attitude to mathematics than those in grades VIII and IX; (iv) in general, pupils in grades IX and X had more favourable attitude to mathematics than those in grade VIII, their attitude being less favourable in grade X than in grade IX; (v) the boys and girls of grade X had more or less similar attitude; (vi) boys, in general, did not differ from girls in their attitude to mathematics; (vii) it had been observed that there was a grade x sex interaction in the attitude towards mathematics; (viii) rural as well as urban children, as

they advanced in their studies showed more favourable attitude to mathematics; (ix) urban children, in general, had more favourable attitude to mathematics than rural children; (x) it had been found that there was an area x sex interaction in the attitude to mathematics; and (xi) children in the Saurashtra region as a whole had a favourable attitude to mathematics; the students in Rajkot district had the most favourable attitude to mathematics while students in Surendranagar district had the least favourable attitude.

*216. *GAUR, R. S., A Study of Values and Perceptions of High School Students of the State of Rajasthan and their Relation to Learning, Ph.D. Edu., Raj. U., 1975.*

The objectives were: (i) to study the relationship between learning and students' values, self concept and perception with special reference to urban and rural, and boys and girls groups of students; and (ii) to study the perception of students towards home, school, friends, occupation and society. The study was forwarded on a few hypotheses: (i) the school learning is related to values and perceptions; (ii) boys and girls differ significantly on values and perceptions; and (iii) the urban boys, girls and adolescents differ on the set of values from the rural boys, girls and adolescents.

The study was conducted on seven percent of the total class X students of higher secondary schools of Rajasthan selected through stratified randomisation technique. The learning was measured by the standardised attainment test of Bhatnagar, values by the Allport-Vernon-Lindzey Study of Values adopted by Bhatnagar, and perception by the Bhatnagar's Self Concept Inventory. The data were analysed by using t test and correlational techniques.

The study revealed that (i) on theoretical values, boys and girls of either rural or urban origin did not differ but urban girls differed from rural girls; (ii) on economic values, rural boys and girls, and rural and urban girls did not differ, but urban boys were significantly higher than urban girls; (iii) rural boys and girls did not differ on aesthetic values, political and religious values; (iv) urban boys and girls did not differ on social values; (v) rural boys and girls, and urban boys and girls did not differ significantly on perception of self-confidence; (vi) in case of urban girls, learning was related positively to theoretical and social values but negatively to economic and religious values; (vii) in case of rural girls, social and theoretical values were related to learning significantly; (viii) in case of urban boys, theoretical value was related significantly

to learning; and (ix) for rural boys, none of the values were related significantly to school learning.

217. GIRI CHHIDDA, *A Study of the Personality Characteristics of Athletes Participating in Contact, Non-Contact and Semi-Contact Physical Activities, Ph.D. Edu., Punjabi U., 1977.

The important objectives of the study were: (i) to study the personality characteristics of male athletes participating in contact, non-contact, and semi-contact physical activities; (ii) to assess the personality characteristics of the athletes in relation to those of normal population; and (iii) to arrive at the profile pattern of athletes of fifteen sports sub-groups.

The sample consisted of 1045 randomly selected athletes of fifteen sports groups representing four levels of competition from different parts of the country. The tool employed was the Cattell's Sixteen Personality Factor Inventory. The data were analysed through t tests and patterns of similarity coefficients.

The major findings were as follows: (i) Contact athletes when compared to semi-contact and non-contact athletes were bright, realistic and group-dependent. (ii) The sports groups were alike at all the four levels, viz., college, university, state, and nation. (iii) Personality patterns of each of the contact, semi-contact and non-contact groups at all four levels were similar. (iv) Personality type such as 'cricket type', 'tennis type' tended to appear only at the national level, as denoted by high dissimilarity between the groups.

218. GIRISH BALA, *A Factor Analysis of Reasoning Ability of 13, 14, 15 years old Children Studying in Delhi Higher Secondary Schools, Ph.D. Edu., JMI, 1978.

The major hypotheses were: (i) it is possible to identify the independent factors — CMC, CMR, CMI, NMC, NMR and NMI, of Guilford's SI model constituting reasoning ability, among children of 13, 14, and 15 years of age; and (ii) the factors constituting reasoning ability emerge more clearly with experience, i.e., they can be more clearly identified at 15 rather than at the lower age levels.

Nineteen tests to provide measures of the cognition and convergent production of semantic classes, relations and implications categories of the SI model, were adapted and devised. The initial try-out of these tests was conducted on 13 year, 14 year and 15 year old children of Hindi medium higher secondary schools of Delhi. Harper's item analysis chart was used to

read indices of item difficulty and discriminations. Suitable items were retained for the final test. The final test was administered to 182 children of 13 years age group, 205 children of 14 years age group, and 153 children of 15 years age group. The reliability coefficients of the tests were above 0.50 — the minimum suggested by Guilford, except in case of Sequential Association Test for age group 15 (.476) and Associations IV (.487) for age group 13. After the varimax rotation and Cliff's targeted rotation were tried, the canonical correlations were calculated to see whether the various SI categories were really independent. The canonical correlations obtained were quite high and significant thus indicating that the various categories were not really independent. Thus oblique rotations were employed.

The important conclusions were: (i) The first hypothesis was partially substantiated as much as factor cognition of semantic implications (CMI) emerged clearly in age groups 14 and 15. (ii) The second hypothesis that the factors constituting reasoning ability emerge more clearly with experience, was partially substantiated. (iii) The following factors were identified — Inference or General Cognition and Convergent Production, Perception of Abstract Similarities or Convergent Production of Semantic Classes and Relations, Induction or Education of Conceptual Relations or Cognition of Semantic Classes and Relations, Association or Relational Thinking or Diffused Convergent Production and Cognition of Semantic Implications, Conceptual Foresight or Cognition of Semantic Implications, Deduction or General Convergent Production, and Apprehension of Relations or Mixed Classification and Relations.

219. GOPAL, A. K., *Certain Differentiating Personality Variables of Creative and Non-Creative Science and Engineering Students, Ph.D. Edu., Kur. U., 1975.

The study proposed the following hypotheses: (i) creative science students are significantly more reserved, emotionally stable, assertive, sober, self-opinionated, imaginative, shrewd, experimenting, self sufficient and relaxed than non-creative science students; (ii) creative engineering students are significantly more reserved, emotionally stable, assertive, sober, self opinionated, imaginative, shrewd, experimenting, self sufficient and relaxed than noncreative engineering students; (iii) creative engineering students are significantly more out-going, happy-go-lucky and tender minded than creative science students; and (iv) non-creative engineering students are significantly more

out-going, happy-go-lucky and tender minded than non-creative science students.

The sample of students was drawn from Kurukshetra University and one university from each of the Punjab and Uttar Pradesh. The age limit of the students in the sample ranged from eighteen to twenty-one years. The Wallach-Kogan Tests of Creativity was employed for locating the creative and non-creative students. The Cattell's Sixteen Personality Factor Questionnaire, the Kapoor and Kocher's Socio-Economic Status Scale Questionnaire, the Non-directive Interview Schedule, and the Rorschach Psycho-Diagnostic Test were administered to collect data. Analysis of covariance having SES as a covariate was employed to analyse the data.

The following were the findings of the study : (i) Creative science students were found to be more reserved, emotionally stable, assertive, sober, expedient, venturesome, suspicious, imaginative, shrewd, experimenting, self sufficient and relaxed than the counterpart group. The noncreative science students when compared with creative science students were found to be more out-going, affected by feelings, humble, happy-go-lucky, conscientious, shy, trusting, practical, forthright, conservative, group-dependent, and tense. (ii) Creative engineering students in comparison to their less creative peers were found to be more reserved, emotionally stable, assertive, sober, expedient, venturesome, tough-minded, suspicious, imaginative, shrewd, experimenting, and self sufficient. The noncreative engineering students were found to be more out-going, affected by feelings, humble, happy-go-lucky, conscientious, shy, tender-minded, trusting, practical, forthright, conservative, and group dependent. (iii) On comparison, creative science students were found to be more reserved, assertive, expedient, conservative, group-dependent, and undisciplined, while creative engineering students were found to be more out-going, humble, conscientious, experimenting, self-sufficient, and controlled. (iv) On comparison, the non-creative science students were found to be more reserved, assertive, expedient, tough-minded, imaginative, shrewd, conservative and undisciplined, whereas the noncreative engineering students were found to be more outgoing, humble, conscientious, tender-minded, practical, forthright, experimenting, and controlled. (v) The creative science students showed greater fertility of thought on the Rorschach Test. (vi) The creative science students were more insightful and had better understanding than creative engineering students. (vii) Noncreative science students possessed more organisational ability than noncreative engineering students.

*220. GUPTA, A. K., *A Study of the Relationship of Creativity with Self Concept Among the School Going Children of 12 + in Jammu City, Ph.D. Edu., Pan. U., 1977.*

The main objective of the study was to find out the relationship between creativity and self-concept among the school going children of the age group twelve plus in Jammu city.

The sample consisted of 1000 boys and girls. To measure creativity, a verbal and non-verbal battery of MIER test of creativity which was constructed and standardized by the investigator was used. For estimating real self concept and ideal self concept, the Deo's Personality Word List in Hindi was used. The statistical techniques used were mean, median, standard deviation, skewness, kurtosis, significance of the difference between group means, correlation and factor analysis.

The main conclusions of the investigation were as follows : (i) There was an empirical evidence on the theoretical frame work given by self-theorists like Allport, Rogers and Maslow. (ii) The results highlighted the importance of having higher and healthier self concept and higher self-acceptance as important personality characteristics conducive to higher creativity whether verbal or nonverbal. (iii) Highly creative individuals were found to possess higher self concepts and high self-acceptance both of which were conducive to better adjustment and positive mental health. (iv) The intimate relationship between creativity and self concept indicated by contrasted group analysis could not be substantiated by high correlation between the two variables, possibly because of scatter caused by the middle fortysix percent group. (v) The existence of two independent dimensions of creativity, verbal and nonverbal, was verified. (vi) Creativity and self concept were found to be closely related dimensions, yet presence of a common factor between the two was not borne out by the results.

*221. GUPTA, B. P., *A Study of Personality Adjustment in Relation to Intelligence, Sex, Socio-Economic Background and Personality Dimensions of Extraversion and Neuroticism, Ph D. Edu., Utkal U., 1978.*

The main purpose of the study was to explore if the personality and environmental variables had any association with the way a person copes with the demands and pressures of day to day living while satisfying his needs and establishing a harmony with himself and with his environment.

The try-out sample was a purposive-incident

one and consisted of 800 undergraduate students from eight colleges of Orissa. The sample for the final data collection was 400 students. The tools used in the study included (i) a personality adjustment inventory constructed and standardised for the purpose, (ii) adapted version of the Maudsley Personality Inventory, (iii) the Cattell's Culture Fair Intelligence Test, and (iv) a biodata blank. Correlation, analysis of variance, percentiles and other statistics were used in the analysis of the data.

The following were some of the main findings of the study: (i) There was no significant sex difference in regard to personality adjustment among college students. (ii) There was no significant relationship between intelligence and adjustment of college students. (iii) There was a positive and significant relationship between adjustment and family income. (iv) There was no significant relationship between personality adjustment and parental education, father's occupation, and number of siblings. (v) The variable of mother tongue was found not significantly related with adjustment of college students so far as Bengali and Oriya speaking college students of Orissa were concerned. (vi) Students having urban background differed significantly, with higher adjustment on their part, from those having rural background. (vii) There was no significant difference with regard to personality adjustment between married and unmarried college students. (viii) There was a positive and significant relationship between personality adjustment and extraversion - introversion (as per the concept of Eysenck). (ix) Neuroticism was found to be highly significantly and negatively associated with personality adjustment.

222. GUPTA, V. K., *A Comparative Study of "Independence Conformity Behaviour" of Intellectually Bright and Dull Pre-adolescent Students*, Ph.D. Psy., Agra U., 1973.

The major objectives of the study were: (i) to see whether childhood and adolescence had different impact on a man's independence and conformity behaviour; (ii) to see whether boys and girls had significantly different independence conformity behaviour because of sex variation; (iii) to see whether brightness and dullness of intelligence affected independence conformity behaviour differently; and (iv) to see whether other variables during their simultaneous operation on independence conformity behaviour interacted with each other.

In the present investigation schools were selected on a purposive sampling basis. In all, eight schools were selected. Subjects were selected from classes

VI, VII and VIII, and from age groups ten, eleven, twelve and thirteen. For each age group 150 boys and 150 girls were selected randomly from 1400 subjects. Thus a sample of 1200 students was obtained. By administering a test of intelligence (Tandon, 1970) seventysix bright and dull children were taken out from each category of age. Out of 608 intellectually bright and dull children the actual sample for the experiment was selected. Thus the final sample comprised 400 students with eight subsamples of fifty subjects. The Tandon's Samoohik Mansik Yogyata Pariksha was the tool used for selecting the sample on the basis of bright and dull levels of intelligence. The instrument for measuring the independence conformity behaviour was designed and constructed by the author.

The major findings of the investigation were as follows: (i) independence conformity behaviour increased in accordance with age, but it was not statistically significant; (ii) results showed that there was significant difference between boys and girls in their independence conformity behaviour; and (iii) independent conformists were of high intelligence; results showed that there was a significant difference at 0.05 level of significance between intellectually bright and dull independent conformists.

223. JACHUCK, K., and MOHANTY, A. K., *Low Socio-Economic Status and Progressive Retardation in Cognitive Skills — A Test of Cumulative Deficit Hypothesis*, Post-Graduate Dept. of Psy., Utkal U., 1974. (UGC financed)

The study aimed at finding out the effect of low SES belongingness upon nonverbal reasoning and verbal ability as two forms of basic cognitive skills. It was hypothesized that the rate of intellectual and language development of the socially disadvantaged class would progressively decline with age.

The sample consisted of 100 boys out of which, fifty were between 8-10 years, and the rest were between 14-16 years. Within each age group equal numbers of subjects were chosen from high SES and low SES families. The boys were selected from three different schools of Bhubaneswar. The Raven's Standard Progressive Matrices and the Stroop Test were administered. The statistical techniques used in the analysis of results included analysis of variance and t test.

The findings of the study were as follows: The high SES subjects from rich educated families had better performance than the low SES subjects from poor uneducated families in both the tests. At the higher age the low SES group was found to have faster word

reading speed than the high SES group. Significant interaction of age and SES was obtained. The high SES groups had faster colour naming speed than the low SES groups at both the age levels. Disadvantaged lower class children did not compensate for their handicap when they came out of the limited home environment and grew in a wider urban structure and school environment. The cognitive growth of disadvantaged children was at a slower rate than that of the advantaged, and hence, the disadvantaged children showed a cumulative deficit in cognitive skills as they grew older.

224. JAYAGOPAL, R., *Personality Profile of the Under and High Achievers of some of the Schools in the City of Madras, Dept. of Psy., Madras U., 1974. (UGC financed)*

The study aimed at identifying the personality traits of under and high achievers and thus to draw their personality profiles.

For the purpose of the study, the items on the Form A of the Cattell's 14 Personality Factor Questionnaire (14 HSPQ) were modified and translated into Tamil. This was administered to 275 students of standard IX from nine high schools functioning in the lower socio-economic pockets of Madras City. The coefficient of reliability by split-half method for this translated version of the 14 HSPQ was found to range from 0.88 to 0.94 for all the 14 factors. The criterion groups of under (low) and high achievers were selected on the basis of marks. The annual marks in the standard VIII of students of standard IX were converted into Z-scores and were arranged in a descending order. The upper and lower quartiles of this distribution formed the high and under achievers respectively. The sample thus selected included sixty-nine students in each of the groups of high and under achievers. Product-moment correlations were computed between the scholastic achievement scores and the scores on the 14 HSPQ.

The results of the study were as follows: In the case of high achievers there was no significant correlation between scholastic achievement and personality with regard to eleven out of fourteen personality factors of Cattell (factors B, C, D, F, G, H, J, O, Q₂, Q₃, and Q₄). But with regard to the factors A, E, and I, the correlations were highly significant. In the case of under achievers, twelve out of fourteen personality factors of Cattell (factors A, B, C, D, E, F, G, I, O, Q₂, Q₃, and Q₄) were not significantly correlated with the scholastic achievement. The under-achievers' profile revealed that they were characterised by spontaneity, vigour, spirit to associate with the group

readily, and uninhibited and zestful nature. The high achievers' profile revealed that they were reserved, humble, and tough minded.

*225. KALRA, B. R., *Psychological Determinants of Problem Behaviour Among Girl Students in and around Calcutta, Ph.D. Edu., Cal. U., 1976.*

The investigation was carried out in order (i) to study the type of problems which might be having a disruptive influence on the minds of girl students and which were likely to disturb the classroom discipline of an educational institution, and (ii) to understand why the students behaved as they did.

From a stratified random sample of schools of Calcutta and its suburbs, a sample of 1078 girl students of classes IX, X and XI were drawn for the study. On the basis of the marks obtained in the examinations, the sample was divided into high, normal and low achievers. The Mooney Problem Check List (High School Form, 1950 revision), the Hindi and Bengali versions of the Cattell and Beloff's HSPQ Form A, and the intelligence test developed by the Bureau of Educational and Psychological Research and Training, Calcutta were used to collect the data. Some of the problem cases out of the sample were studied in detail through interviews. Parents, teachers, principals and students in group were interviewed separately. Statistical techniques like phi-coefficients, t test, analysis of variance, correlation, factor analysis and percentages were used in the analysis of the data.

The following were some of the findings of the study: (i) The items of concern for the girls as indicated by the Mooney Problem Check List were worrying about examinations, nervousness, scholastic difficulties, fearfulness, carelessness, laziness, shyness, and emotional instability. (ii) There was no significant difference between classes with respect to problems. (iii) Schools formed a significant factor contributing to the behaviour problems among students. (iv) There was no relationship between the problems and intelligence. (v) Only in a few cases it was found that problem and achievement were related. (vi) There was no relationship found between personality and problems.

*226. LYGDOH, K. H., *A Study of the Achievement Motive, Fear of Failure, Concerns, Occupational Aspirations and Family Influence of the College Tribal and Non-Tribal Boys and Girls of Meghalaya, Ph.D. Edu., MSU, 1976.*

The main objective of the investigation was to

study achievement motive of tribals and their relation to non-tribals in n Ach, fear of failure (FOF), occupational aspirations, concerns and family influence.

The sample consisted of 300 undergraduate boys and 300 undergraduate girls drawn from six day colleges and five night colleges of Shillong. Out of 600 students, 300 were tribal students and 300 were non-tribal students. The tools administered were: (i) the Mehta's TAT pictures for measuring n Ach; (ii) the Birney's TAT pictures for measurement of Fear of Failure (FOF); (iii) the Kuppaswami's Socio-Economic Status Scale, (iv) the Cantrill's Concern Scale, and (v) the Occupational Aspiration Inventory. Mean, SD, correlation, and t test were employed to analyse the data.

The findings were: (i) The mean score for n Ach of the sample was 10.32 which was very high as compared to Delhi (4.76), Madras (3.79), Baroda (6.00, 4.81, 3.92, 3.10, 1.88), Assam-tribal (5.55) and non-tribal (4.49). (ii) The mean difference between the scores of n Ach of the tribal and nontribal students was not significant. (iii) The middle socio-economic status (SES) students had higher n Ach level than the high SES and low SES students. (iv) The n Ach was mostly related to FOF. The tribal mean score of FOF was 2.47 with SD of 3.44 and the non-tribal mean score was 2.62 with SD of 3.58. The difference was not significant. Girls were found to be more afraid of failure than boys. (v) The FOF level between high SES and middle SES students, and middle SES and low SES students did not differ significantly. (vi) Occupational aspiration had inverse relationship with n Ach. The occupational aspiration levels of tribals and nontribals differed significantly at 0.01 level. The aspiration of girls for occupation was higher than that of boys. Low SES students had higher aspiration for occupation than the middle and high SES students. Middle SES students had higher occupational aspirations than high SES students. (vii) Students had less hope and concern for themselves but more hope and concern for their country. Tribals had more hope and concern for their country than nontribals. Girls had more concern for self than boys. Girls and boys had almost equal concern for their country. (viii) Students who had less family influence were more afraid of failure than those who had sufficient family influence. Between the high and average family influence groups the occupational aspirations were of the same magnitude. The occupational aspirations of those students who had low family influence were low.

*227. *MAYA KUMARI, A Study of Relationship Between Attitude and Background Factors of*

Students Towards their School Experiences, Ph.D. Psy., Bih. U., 1976.

The objectives of the study were to find out: (i) whether there would be significant relationship between general attitude and age, period of stay, mental ability, and socio-economic status of students; (ii) whether there would be significant relationship between self image, attitude and age, period of stay, mental ability, and socio-economic status of students; (iii) whether there would be significant relationship between class attitude and age, period of stay, mental ability and socio-economic status of students; (iv) whether there would be significant relationship between social adjustment, attitude and age, period of stay, mental ability, and socio-economic status of students; and (v) whether there would be significant relationship between anxious attitude and age, period of stay, mental ability, and socio-economic status of students.

The sample consisted of 490 students from two schools of Muzaffarpur. A questionnaire consisting of five attitudinal indices, namely, general attitude index, self image index, attitude to class index, social adjustment index, and anxiety index was administered. Chi-square and correlation were used to analyse the data.

Following were some of the findings of the study:

(i) Both sex and age were important determiners of attitudes towards school. Girls in the age group of nine to twelve years had less favourable attitude than those in the age group of thirteen to fifteen. (ii) The longer years of stay in a particular institution was positively related to general attitude irrespective of sex. (iii) Mental ability was positively related to general attitude index for both the sex. (iv) Attitude of boys to class was positively related to age, length of stay, mental ability and not related to socio-economic status. The attitude of girls to class was positively related to age, length of stay, mental ability and negatively related to socio-economic status. (v) Social adjustment attitude of boys was positively related to age and mental ability, negatively related to socio-economic status, and not related to length of stay at school, while that of girls was positively related to age and mental ability, and not related to length of stay and socio-economic status. (vi) Anxious attitude of both boys and girls was positively related to length of stay, mental ability and socio-economic status. Girls were found to be more anxious than boys.

*228. *MEHTA, A. D., Sex Role Identification in Pre-School Children from Three Socio-Economic Classes, Ph.D. Child Development, MSU, 1972.*

The investigation aimed at studying the sex-role

rate growth curves for males, females and total adolescent group at each age level. The data were analysed with the help of general and differential growth curves, and descriptive statistics like mean, SD, standard error, product-moment and partial correlations. Multiple regression equation and factor analysis were also used in analysing data.

The main findings of the study were as follows : (i) longitudinal and cross-sectional growth analysis revealed increasing trend of female perceived self, male social self and decline of male perceived self and female social self; (ii) ideal self for both sexes indicated rapid increase; (iii) discrepancies related to perceived and social self suggested varying patterns, while those related to ideal self revealed upward rising growth throughout adolescence; (iv) in most of the differential growth curves, low and average groups indicated parallel growth, while high groups scored higher on all variables of self; (v) in both general and differential growth analysis the best period of growth was found to be between sixteen and eighteen years, marking seventeenth year as the peak point in growth of self concept; (vi) females showed more stability of self than males during adolescence.

*231. MUBAYI, G., *A Study of the Achievement Motive of Secondary School Pupils of Scheduled Tribes of South Gujarat, Ph.D. Edu., MSU, 1976.*

The investigation attempted to study the need achievement of scheduled tribe students studying in the high school classes of South Gujarat, mainly a tribal area. The main objectives were : (i) to make comparative studies of the n Ach levels of the following different groups, (a) tribals in tribal schools with nontribals in tribal schools, (b) tribals in tribal schools with tribals in nontribals schools, and (c) nontribals in tribal schools with nontribals in nontribal schools; and (ii) to study the relationship of the following factors with n Ach of pupils — (a) age, (b) sex, (c) class or grade, (d) number of siblings, (e) birth order, (f) location of the school, (g) educational level of the father, (h) occupational level of the father, (i) mobility of the family, (j) pupils' vocational aspirations, (k) pupils' motivation towards school, and (i) pupils' perception of achievement demands by peers, teachers and fathers.

The sample consisted of 1506 students selected randomly from VIII, IX, X and XI classes of forty-three tribal schools of South Gujarat comprising Broach, Bulsar, Dang, and Surat districts. The tools administered were : (i) the Mehta's TAT; (ii) an iden-

tification data sheet; (iii) an inventory of qualities; (iv) the Junior Index of Motivation Scale; and (v) the Flexibility-Dogmatism and Idealism-Pragmatism scales. Mean, SD, t and coefficient of correlation were used to analyse the data.

The important findings were as follows : (i) Pupils in the nontribal schools had a higher n Ach level than those in the tribal schools. (ii) Nontribal pupils in the tribal schools scored significantly higher than tribal pupils in the same type of schools. (iii) The difference in n Ach between the tribal and nontribal pupils in the nontribal schools was not significant. (iv) Nontribal pupils in the nontribal schools scored significantly higher on n Ach than the nontribals in the tribal schools. (v) The mean n Ach of nontribals in the nontribal schools was higher than that of any of the other groups. (vi) Pupils of the Gamit and Vasava tribes in the tribal schools had a higher mean n Ach than their counterparts in the nontribal schools, but pupils of the Chaudhari and Koli tribes in the nontribal schools had a higher mean n Ach level than the pupils of these tribes in the tribal schools. (vii) The low mean n Ach level in each of the four groups was found to be due to the absence or low frequency of occurrence of components like negative instrumental activity, negative goal anticipation, negative affect, nurturant press and personal and world blocks. (viii) Girls in the nontribal schools, whether tribal or nontribal, scored higher on n Ach than those in the tribal schools. The environment of the school and not the cultural background was found to be the factor influencing their n Ach level. (ix) A constant increase in n Ach of tribal pupils going through the high school classes of the tribal schools was evident. The same is true for tribal and nontribal pupils in the nontribal schools. (x) The n Ach level of pupils from rural schools was higher in the case of nontribal pupils; the pupils from the urban nontribal schools revealed a higher n Ach than the rural nontribal schools. (xi) The n Ach level of pupils in the tribal schools and nontribal pupils in the nontribal schools whose fathers were labourers was significantly lower than the n Ach level of pupils in the same two groups whose fathers were engaged in independent profession. There was no relationship between age of pupils and n Ach among tribal and nontribal pupils of the nontribal schools. (xii) The number of siblings in a family, birth order of the pupils, vocational aspirations of pupils, occupational level of the father, motivation towards school, pupils' perception of achievement demanded by their peers, perception of achievement demanded by fathers and educational level of father, were not found to be related to n Ach.

identification of pre-school age boys and girls from three socio-economic classes and detecting relationship between sex-role preferences and certain personal variables. The hypotheses tested were: (i) There would be no difference in the sex-role preference scores of boys and girls of three to five years of age. (ii) There would be no relationship between the sex-role preference of children from three different socio-economic levels. (iii) There would be no relationship between the age of the child and his sex-role preference as measured on the Brown's IT Scale.

The sample consisted of 169 children between the chronological ages of three to five years, from Jeevan Sadhana Pre-school and Jeevan Mangalya Pre-school. The tools administered were: (i) The Brown's IT Scale, (ii) The Phatak's Draw-a-Man Test, (iii) The Kuppaswamy's SES scale (1962); and (iv) the vocabulary items from revised Stanford Binet's Test of Intelligence. Correlation and analysis of variance were used to analyse the data.

Some of the major findings were: (i) pre-school boys and girls differed from each other in their sex-role preferences; (ii) the three groups of pre-school boys and girls formed on the basis of socio-economic status did not differ from each other in their sex-role preferences; (iii) the relationship between the performance on the Draw-a-Man test and vocabulary test for girls was positive while in case of boys the relationship was not significant; and (iv) the relationship was significant between vocabulary test and age in case of girls while it was not significant in case of boys.

229. MISRA, S. L., *Variations of Intelligence with Occupational Training Courses, Age, Sex, and Locality, Ph.D. Psy., AMU, 1967.*

The present investigation was designed to verify in Indian conditions Vernon's (1947) claims that variations of intelligence measured by certain tests could be observed under certain conditions with reference to age, sex, locality and occupation.

One part of the sample consisted of 288 students from different schools and colleges of Aligarh. The subjects were distributed over the range of courses taught from class IX to undergraduate standard for one of the experimental designs in the study. For the other experimental design the sample consisted of 306 men from different professional courses of Aligarh Muslim University. The first sample was for the study of the variation of intelligence with reference to age, sex and locality and the second sample was for the variations of intelligence and attainment with reference to the occupational training courses.

The data were collected with the help of the following tools: (i) the Vernon's Nonverbal Intelligence Test; (ii) the Vernon's Drawing Pattern Test; (iii) the Vernon's Pattern Reproduction Test; (iv) the Vernon's Graded Arithmetic-Mathematics Test; (v) the Raven's Progressive Matrices; (vi) the Lovell's Hidden (Gottschaldt's figures) Test; (vii) the Trist-Hargreaves Concept Formation Test; (viii) the Lovell's Concept Formation Test; and (ix) the Ray Chowdhury's Aligarh VIT. Fisher's *t* values were used to analyse the data.

The study revealed that (i) the highest scorers were fifteen year olds and the lowest scorers were fourteen year olds and the medium scorers were sixteen, seventeen and eighteen year olds; (ii) boys did significantly better than girls; (iii) urban high scorers did significantly better than the rural high scorers; (iv) it was found that high scorers of physical science group had shown significantly high total in two tests but there was no significant difference in the totals with high scorers of engineering group; (v) high scorers of humanities, natural sciences, teachers under training showed significantly high totals in four tests under artistic and leisure versus practical and occupational factors (i.e., artistic and literacy; business and construction — mechanical); and (vi) the high scorers of business and library science had also shown significantly high totals in two tests under abilities versus interest factors. (i.e., theatrical, dramatic and gregarious).

230. MOHAN, A., *Development of Self Concept in Relation to Intelligence, Learning Ability, Achievement and Achievement Motivation at Adolescent Level, Ph.D. Edu., Pan. U., 1975.*

The main objectives of the study were: (i) to trace the general growth of self concept over years of adolescence, both longitudinally and cross sectionally, separately for males, females and for combined groups of adolescents for the perceived, ideal and social aspects of the self and the discrepancies among them; (ii) to study the differential growth of self concept of high, average and low ability groups of intelligence, learning, achievement and achievement motivation; and (iii) to establish the relationship of the variables of self concept with the correlates of intelligence, learning (verbal and nonverbal), achievement motivation, achievement and originality.

In this investigation the developmental exploratory survey of self concept was coupled with the longitudinal and cross-sectional techniques. The longitudinal growth was traced studying the same subjects for the successive years only. This was combined with cross-sectional comparison of self concept from thirteen through twenty years, plotting graphically spa-

232. NAGAR, S., *A Comparative Study of the Personality Characteristics of Socially Accepted and Rejected Girls of Higher Secondary Schools of Agra City, Ph.D. Edu., Agra U., 1973.*

The major objectives of the study were: (i) to find out sociometrically accepted and rejected girls, their sociometric status and achievement; (ii) to study the interest and intelligence of the accepted and rejected girls and compare them in relation to some of the personality characteristics; and (iii) to investigate into the home, health, social, emotional and school adjustment of the subjects.

Sociometric technique was used to detect socially accepted or rejected girls. Schools were selected from different parts of the city. A sociometric test was administered to one thousand girls of class IX, out of which deviates were screened out. Finally, 160 accepted and 160 rejected girls were selected as the sample of the study. The tools used were: the Singh's Interest Record, the Kuppuswami's SES scale, the Saxena's Adjustment Inventory, the Jalota's Group Test of Intelligence, the Chaudhary's Indian Adaptation of TAT, and the academic achievement records of the subjects from schools. For analysis of data mean, SD, and significance of mean were found out, and chi-square test was applied.

The major findings of the study were as follows: (i) stars and rejectees had almost common interest patterns, but the rejectees had shown more inclination; (ii) on the whole, stars were found to belong to the families of higher socio-economic position as compared with rejectees; (iii) socially accepted students, on the whole, tended to make higher academic achievement in comparison to socially unsuccessful students; (iv) stars were found more intelligent on the intelligence test than the rejectees; (v) socially accepted girls were found better adjusted than the rejectees; (vi) on the basis of TAT it was observed that stars tended to be more rational and thoughtful than the rejectees.

*233. NIRPHARAKE, A. M., *An Experimental Study of Some Methods of Training in Creativity, Ph.D. Psy., Poona U., 1977.*

The study aimed at developing an integrated programme of training in creativity and testing it experimentally on the high IQ — low creativity children in the seventh grade. For the purposes of training, four vital areas of creativity, namely, cognition or perception, divergent production, evaluation and appreciation, and creative problem solving, were selected. The hypotheses of the study were: (i) the control group receiving no training would not make any significant

improvement in creative thinking; (ii) all the experimental groups, receiving training in at least one area would make significant improvement; (iii) the performance of the experimental groups on the creativity test after training would be significantly better than the performance of the control group after the period of no training; (iv) the experimental group receiving training in all four areas would make the highest improvement; and (v) the four training programmes would differ in their influence on the subjects' performance, with divergent production resulting in improvement greater than the others.

The sample consisted of thirtysix boys in grade VII, coming from middle class families with urban background in Poona city with superior intelligence and normal level of creativity. Creativity was measured by the Torrance Test of Creative Thinking. The training programme for creativity consisted of 100 sessions, 25 sessions devoted to each area of creativity. The general procedure was as follows: First, general introduction to the programme and instructions, then, short lectures on the principles followed by discussions, demonstration of a technique by the experimenter, exercises on it by subjects individually and collectively, again followed by discussion. Procedures like group problem solving and role playing were also utilized whenever there were opportunities.

All the hypotheses except the last one were accepted. It indicated that even short periods of training in creativity would bring about fruitful results; however, the durability and transfer of this improvement remained to be explored.

*234. PAL, J., *Personality Study of the Student Leaders, Ph.D. Edu., Sam. U., 1976.*

The objectives of the study were: (i) to construct and standardize an interest inventory; to standardize and adapt the Bell's Adjustment Inventory; and to conduct a correlational study of interest, adjustment and personality of student leaders of Orissa; (ii) to compare the interest, adjustment and personality patterns of student leaders with those of common mass of college students; and (iii) to analyse the personality correlates of interest patterns of the student leaders.

An interest inventory covering educational, cultural, moral, social, vocational, economic, scientific, athletic, religious and political interests of the college students was constructed using Lee-Thorpe Logical Keying technique. The test was validated against a criterion measure constructed on the line of Allport's Study of Values and validity indices ranged from 0.63 to 0.87. Reliability coefficient using KR-20 formula

ranged from 0.48 to 0.78. Standard score, percentile and stanine norms along with an interest profile were developed. Comparison of the interest patterns, adjustment dynamics and personality variables of the student leaders and the student non-leaders were made using chi-square and t tests. Analysis of contributing factors like home, age, education, hero-worship, etc., was done by analysing the personal record card. Personality correlates of interest patterns were analysed by classifying the student leaders into different categories.

The following were the major findings : (i) The student leaders' preference for different fields of interest in order were political, vocational, moral, economic, social, cultural, scientific, athletic, educational and religious. (ii) The differences in the interest patterns of the student leaders for different fields of interest were not significant. (iii) There was no significant difference between the adjustment patterns of the leaders and non-leaders. (iv) The differences in the personality make-up of the student leaders and student non-leaders were significant. (v) Ill-adjusted student leaders had more liking for cultural, athletic and religious affairs, whereas well-adjusted student leaders had more liking for educational, social, vocational and political affairs. (vi) Less stable student leaders had greater economic interest and more stable student leaders had greater educational and scientific interest. (vii) Those leaders who were more self-confident and well-adjusted had greater social interest, and those who were more self-conscious and had a feeling of inferiority had greater economic interest. (viii) The sociability scale did not indicate the dominance of any interest.

235. PANDIT, K. M., *The Adjustment Problems of the Gifted Children and their Reactions to Frustration*, Ph.D. Psy., MSU, 1973.

The main objectives of the study were : (i) to investigate the adjustment problems of the gifted children; (ii) to find out the different areas where their problems were located; (iii) to compare the problems of the gifted children with the nongifted so as to know whether they reacted differently to experimentally produced frustration or not, and (iv) to find out whether the reactions to frustration would be more stereotyped in case of nongifted and individualistic, and spontaneous in case of gifted or not.

This was a correlational study. Sampling was multistage. At the first stage 450 most intelligent students were selected from grades VII, VIII and IX of sixteen different schools in the city of Baroda. After different stages of screening finally eighty girls and

seventy boys were selected as the gifted students. The group of nongifted eighty girls and seventy boys was selected separately on the basis of teachers' ratings and school achievement. For selecting the sample the Terman's Blank for the Selection of Gifted Children, the Desai-Bhatt Group Test of Intelligence, the Raven's Standard Progressive Matrices, and two Blanks (Home and School) constructed by the investigator were used. The other tools of research used in the study were the following : (i) the problem checklist for selecting the adjustment problem; (ii) suitable procedure for producing frustration (Underwood); (iii) self concept test; and (iv) the Patel's Anxiety Scale. All the tools were translated into Marathi and Gujarati to suit the population of the study. For analysis of data, means and percentages were computed and chi-square test and analysis of covariance were utilised.

The major findings of the study were as follows : (i) the gifted had less adjustment problems than the nongifted; (ii) girls of both the groups had less problems of adjustment than their corresponding counterparts; (iii) the gifted and the nongifted children did not differ in their level of adjustment almost in all the areas except school adjustment; (iv) gifted boys were more problematic than gifted girls in their overall adjustment; (v) gifted girls were found to be significantly superior in their adjustment to gifted boys in all the areas except social adjustment; (vi) nongifted girls showed superior adjustment to boys except for emotional area; (vii) it was observed that the gifted and nongifted reacted differently to experimentally produced frustrations; the gifted evaluated the situation more positively and critically than the nongifted; it was true in the sexwise analysis as well; (viii) there was no effect of frustration producing instructions on the self concept or anxiety scores of the gifted and the nongifted, but the interaction effect was statistically significant.

*236. PARIKH, P. A., *A Study of Achievement Motivation, School Performance and Educational Norms of Secondary School Pupils of Standards VIII, IX and X (Studying through Gujarati and English as Medium of Instruction) in the City of Bombay*, Ph.D. Edu., Bom. U., 1976.

The objectives of the study were : (i) to study the levels of achievement motivation and each component of it — motivation towards school, educational norms, school performance and anxiety of pupils; (ii) to study achievement motivation, scores on JIM scale, percep-

tion about peers, school performance, beliefs and anxiety of pupils in relation to grade levels — VIII, IX, X, socio-economic status, sex, medium of instruction, community and also in relation to each other, i.e., achievement motivation, motivation towards school, perception, beliefs, school performance and anxiety. The study was forwarded on several hypotheses: (i) the mean achievement motivation score of Bombay city pupils would be higher than those of the pupils in Delhi, Madras and Gujarat schools; (ii) the achievement motivation would be higher in higher grades, in middle SES group in the boys, in English medium school boys, in Jains and Parsi pupils than their respective counterparts; (iii) JIM score would be higher for pupils of Bombay City and would be positively related to score on achievement motivation; and (iv) pupils having high achievement motivation would have higher beliefs, higher performance, average anxiety and would perceive greater number of achievement related qualities in the peers.

The study was conducted on 1050 pupils of twenty-five classes selected on the basis of grade levels, SES, sex, medium of instruction, and community. The respondents were administered a TAT, JIM scale, the Kuppaswamy's SES scale, the Pathak's Belief Scale, adapted version of the Sarason's General Anxiety Scale and an inventory of qualities.

The study revealed that (i) the mean n Ach score of the Bombay city pupils was higher than that of pupils of Madras, Delhi, Baroda, Kaira, U.S.A., Brazil, and Germany; (ii) the components Ga-, G-, H, Bp, Bw were verbalised to a negligible level but Ga+, N+, Ach. Th. were more prevalent indicating higher need achievement and more goal anticipatory ideas; (iii) Bombay girls had higher n Ach score than boys — the girls showed greater number of imageries of N, I+, Ga+, G+ and Ach. Th. indicating higher hope of success oriented imageries; (iv) the pupils of high SES had higher n Ach than the pupils of middle or low SES; (v) the Sikhs, Christians, and Parsis had higher n Ach components than Hindus, Jains, and Muslims; (vi) the eighth standard students had higher n Ach score than the ninth and tenth grade pupils; (vii) the pupils of English medium schools had more achievement oriented ideas than the pupils of Gujarati medium schools; (viii) n Ach was positively related to SES, performance, perception, belief and with all the n Ach components; (ix) educational norms regarding achievement related perception and belief were significantly related to achievement motivation of Bombay school pupils; and (x) the mean anxiety score of the selected sample was higher than other samples.

*237. PATEL, A. D., *To Study Achievement Motive, Anxiety, Performance at the University Examination and Socio-Economic Status of Student-Teachers in the Colleges of Education in the State of Gujarat, Ph.D. Edu., SPU, 1977.*

The major objectives of the study were: (i) to study the level of achievement motive, anxiety and performance of the student-teachers in the colleges of education in the State of Gujarat; (ii) to study the socio-economic status of the student-teachers; (iii) to study the performance of the student-teachers in relation to achievement motive, socio-economic status, and the level of anxiety; and (iv) to study the inter-relationship among socio-economic status, the level of anxiety, the level of achievement motive and the actual performance at the university examination of the student-teachers.

The student-teachers in the State of Gujarat at the time of the investigation formed the population. Stratified sampling technique was followed. A total of 876 student-teachers (both males and females) from thirteen colleges of education formed the sample. The Thematic Apperception Test, the SES scales for rural and urban settings and an anxiety scale were used as tools in the study. The marks of the practice teaching examination also formed part of the data. Analysis of variance and regression equations were used in the analysis of the data.

The following were some of the findings of the study: (i) The level of n Ach of student-teachers of the study was 7.1. (ii) The difference in n Ach between male and female student-teachers was significant, the latter having a higher mean score. (iii) As many as 12.9 percent student-teachers had high anxiety, 64.8 percent had normal anxiety and the rest had either low or very low anxiety. (iv) The mean performance of the high and the low anxiety group was 47.6 percent and 50.2 percent respectively. (v) The mean n Ach scores of high, middle and low SES groups were 8.0, 6.9 and 6.7 respectively. (vi) There was a significant positive relationship between n Ach and performance, n Ach and SES, and SES and performance. (vii) The relationship between anxiety and n Ach was negative but not significant. (viii) There was not any effect of the interaction of the variables under study on the performance of the student-teachers.

238. PATHAK, C. C., *A Study of Achievement Motive, Educational Norms and School Performance of High School Pupils, Ph.D. Edu., SPU, 1974.*

The study aimed at (i) determining the level of

achievement motive (n Ach) in each of the components of the high school pupils, (ii) finding out the educational norms as seen through pupils' responses such as pupils' attitude towards study, their perception of various aspects of school life, conditioned responses and value systems, and (iii) studying the predictive potentiality of n Ach scores in terms of school performance, attitude, conditional responses, perception, intelligence and value systems. It was hypothesised that (i) the n Ach mean score of Kaira district pupils would be higher than that of Delhi and Madras school pupils; and (ii) high achieving schools would have pupils with high n Ach scores.

The sample of the study consisted of 1,346 students of classes VIII, IX and X from twelve schools in Kaira district. These schools were selected on the basis of their socio-economic and achieving status. The tools used for data collection were: (i) the Thematic Apperception Test, (ii) the Madhukar Patel's Intelligence Test (MPIT), (iii) three Achievement Tests prepared by Faculty of Education and Psychology, Baroda; (iv) the Desai Attitude Inventory; and (v) Perception Inventory, Word Association Test and Value Judgement Inventory developed by the investigator.

The major findings were: (i) the pupils studying in schools of high socioeconomic and achieving status had high n Ach scores as compared to pupils studying in schools of various status combinations; (ii) boys and girls did not differ on n Ach components; (iii) n Ach score was positively related to pupils' school performance, attitude towards study and intelligence; and (iv) the difference between the mean scores for perception of the pupils of grade VIII and X was significant at 0.01 level, whereas the difference between the mean scores for perception of pupils of grade IX and X was not significant.

239. PEREIRA, O., *A Study of Five Major Factors contributing to certain Psychological Problems of Pre-adolescents*, Ph.D. Psy., Mys. U., 1974.

The major objective of the study was to examine maladjusted and well adjusted groups of preadolescents with respect to variables like intelligence, scholastic achievement, needs, anxiety and self concept.

The sample was drawn from VII and VIII grade pupils of Mangalore city. Two groups, namely, maladjusted and well adjusted having ninety-nine students in each group were identified by applying the Mooney Problem Checklist (Junior High School Form). The other tools used were: (i) the Raven's Standard Progressive Matrices; (ii) the Taylor's Manifest Anxiety Scale; (iii) Self Concept Rating Scale; (iv) Scholastic

Achievement Tests; and (v) verbal projective techniques.

The main findings of the study were: (i) the maladjusted and well adjusted groups differed in various problem areas like 'boy-girl relationship', 'money, work and future', 'people in general', 'school', 'self centred concerns', 'family', and 'health and physical developments'; (ii) the maladjusted and the well adjusted differed with respect to needs, self concept, anxiety and intelligence but did not differ on scholastic achievement; (iii) in case of maladjusted group the values of 'r' between intelligence and needs, anxiety and self concept, intelligence and achievement were statistically significant, whereas those between intelligence and self concept, intelligence and anxiety, needs and self concept, scholastic achievement and anxiety, scholastic achievement and needs, and scholastic achievement and self concept were not statistically significant; (iv) in case of well adjusted group significant correlation coefficients existed between intelligence and needs, needs and self concept, anxiety and scholastic achievement, needs and scholastic achievement, whereas the correlation coefficients between anxiety and self concept, intelligence and scholastic achievement, scholastic achievement and self concept, and intelligence and anxiety were not statistically significant; (v) amongst the maladjusted preadolescents need for exposition, succorance, creativity and security were found to be more dominating.

240. PHATAK, P., *Mental and Motor Growth of Indian Babies, (1 month — 30 months), (Longitudinal Growth of Indian Children)*, Dept. of Child Development, MSU, 1970.

The major objectives of the study were: (i) to collect some normative information about motor and mental growth of Indian babies on the Bayley scales; (ii) to compare the performance of Indian babies with that of foreign babies; and (iii) to study the Bayley scales for their validity and reliability as applied to Indian babies.

The study employed both longitudinal and cross-sectional method of data collection. There were three major study samples, viz., upper socio-economic class babies of Baroda, lower socio-economic class babies of Baroda and babies of rural areas around Baroda. For the longitudinal study sample babies of one month were selected in March 1963. The study continued till 1969. The sample from urban areas and rural areas was classified by using the Kuppaswami Socio-Economic Status scale (Urban) and the Pareek and Trivedi Socio-Economic Status Scale (Rural) respectively. The total records of babies from urban and

rural, upper and lower socio-economic groups collected by longitudinal and cross-sectional methods were 5884, of which 4226 were by longitudinal method and 1658 by cross-sectional method. Tools employed for the collection of records were: (i) the Bayley Infant Scale of Motor Development (revised 1961a); and (ii) the Bayley Infant Scale of Mental Development (1961b).

Major findings of the study were: (i) the pattern of motor and mental growth was that the rate of growth was faster upto six months after which the rate decreased and became steady during twelve to sixteen months; (ii) stable sex differences in motor and mental records were conspicuously observed in upper socio-economic groups of urban babies but not in urban lower socio-economic and rural groups; (iii) girls seemed to be more influenced by urban-rural and upper-lower socio-economic group dichotomy; (iv) except in motor scale for the first six to seven months the urban upper socio-economic group seemed to be performing better than other groups; (v) the influence of socio-economic class appeared to be differentiating the motor and mental performance only in urban group; (vi) the urban environment suggested positive influence on mental performance; (vii) the trends of motor and mental growth were similar in Indian and foreign babies on Bayley scales; (viii) Indian babies of urban upper socio-economic group were found surpassing foreign babies on motor scale for the first fifteen months thereafter babies of USA surpass others; (ix) on mental scale Indian babies of urban upper socio-economic group were found surpassing babies of USA and UK but not of Israel; (x) the validity and reliability of Bayley scales as applied to Indian babies were acceptable; reliability coefficients for motor and mental scales ranged from 0.12 to 0.83 and 0.15 to 0.88 respectively; motor-mental correlations at eight and nine months were 0.38 and 0.46 respectively.

241. PINTO, T., *A Study of the Psycho-Social Adjustment of Physically handicapped Children*, Ph.D. Psy., Bom. U., 1974.

The main aims of the study were: (i) to investigate if there were significant differences between the adjustment patterns of the orthopaedically disabled subjects and those of normal subjects, and (ii) to investigate into the influence of sex, intelligence and degree of disability upon their adjustment patterns. The following hypotheses were examined: (i) the need patterns of the orthopaedically disabled subjects do not differ significantly from those of normal subjects, and (ii) the reactions to frustration of the orthopaedically

disabled subjects do not differ significantly from those of normal subjects.

The sample consisted of 250 orthopaedically disabled and 121 normal subjects. All the subjects were selected from English medium schools of Greater Bombay. After their selection the normal subjects were selected to equate the disabled subjects in age, sex, intelligence, school environment and socio-economic status. The TAT and the CAT were used to assess need patterns and the Picture-Frustration Study was used for the assessment of patterns of reaction to frustration. The data were analysed by using chi-square test and analysis of variance.

The main findings were as follows: (i) Children and adolescents did not differ significantly in their adjustment patterns. (ii) Disabled adolescent boys differed significantly from their normal counterparts, particularly in *n Ach* and *n Affiliation*. Disabled adolescent subjects of low intelligence differed significantly from normal subjects of similar intelligence in *n Ach* and *n Affiliation*. The deviant patterns of adjustment were as follows: (a) the disabled showed significantly greater instrumental activity in seeking need satisfaction; (b) they also showed significantly greater affective status; (c) in frustration reaction they exhibited significantly greater hostility towards the environment; and (d) under continual stress, that is over the whole test situation, the disabled tended to shift from hostility towards external sources to hostility against oneself.

*242. RAO, B. P., *Some Cognitive Correlates of Creativity*, Ph.D. Psy., Jab. U., 1976.

The investigation aimed to study the relation of three cognitive variables, namely, Category-width, Field-independence and Integrative Complexity, to creative abilities. The hypotheses were: (i) There are statistically significant differences between the mean scores of the 'Broad-category-width' group, and the 'Narrow-category-width' group on (a) Consequences Test, (b) Uses for Things Test, (c) Match Problems Test, (d) Words Test, (e) Associations Test, (f) Thing Categories Test, (g) Three Words Combinations Test, (h) Details Test, (i) Seeing Problems Test, and (j) Object Synthesis Test. (ii) There are statistically significant differences between the 'field-independent' group, and the 'field-dependent' group on each of the following tests - (a) Consequences Test, (b) Uses for Things Test, (c) Match Problems Test, (d) Words Test, (e) Associations Test, (f) Thing Categories Test, (g) Three Words Combinations Test, (h) Details Test, (i) Seeing Problems Test, and (j) Object Synthesis Test. (iii) There are statistically significant differences between the four groups representing the four systems of vary-

ing levels of Integrative Complexity on the above tests.

A sample of 182 boys of class X was randomly chosen from among the students of five municipal high schools of Vijayawada in Andhra Pradesh. Based on the score distributions of the sample on the Pettigrew's Estimation Questionnaire two criterion groups were identified — those who obtained above median score were identified as the Broad-categories-width group, and those who obtained below median score were identified as the Narrow-category-width group. Similarly, based on their scores on Hidden Figures Test, those who obtained above median score were identified as the Field-independent group, and those who obtained below median score were identified as Field-dependent group. Based on the classification norms developed on the sample, four groups falling into different varying levels of Integrative Complexity were identified using Interpersonal Topical Inventory. These criterion groups were compared as to their performance on the following ten creativity tests: Consequences Test which measured originality, Unusual Uses Test which measured spontaneous flexibility, Match Problems Test which measured adaptive flexibility, Words Test which measured word fluency, Thing Categories Test which measured ideational fluency, Associations Test which measured associational fluency, Three Words Combinations Test which measured expressional fluency, Details Test which measured elaboration, Seeing Problems Test which measured sensitivity to problems, and Object Synthesis Test which measured redefinition. Among the tools used, the Pettigrew's Estimation Questionnaire to measure cognitive styles, the Jackson et al. Test to measure field independence, the Tuckman's Interpersonal Topical Inventory to measure all the four systems of Integrative Complexity, and the Guilford's Consequences Test, Uses for Things Test, and Seeing Problems Test, were adapted into Telugu language. The instruments which measured word fluency, expressional fluency, associational fluency and elaboration were developed by the investigator. The data were analysed by using Z statistics, analysis of variance followed by t test, skewness and kurtosis.

Main conclusions of the investigation were as given below: (i) Boys with Broad-category-width displayed superiority over the boys with Narrow-category-width in their performance on creativity tests by displaying more originality, more adaptive flexibility, more word fluency, more ideational fluency, more associational fluency, more expressional fluency, more elaboration, more sensitivity to problems, and more redefinition; but these two groups did not differ signifi-

cantly in their ability of spontaneous flexibility. (ii) Boys with Field-independence generally did better in their performance on creativity tests by displaying more originality, more adaptive flexibility, more ideational fluency, more associational fluency, more sensitivity to problems and more redefinition; but the two groups, did not differ significantly in their spontaneous flexibility, word fluency, expressional fluency and elaboration. (iii) Boys with higher levels of Integrative Complexity performed better than those with lower level of Integrative Complexity on creativity tests by displaying more originality, more spontaneous flexibility, more adaptive flexibility, more associational fluency, more elaboration and more sensitivity to problems; but they did not differ significantly in their word fluency, expressional fluency and redefinition.

*243. RAO, M. L., *A Study of In-Group Out-Group Attitude Formation in Tribal and Non-Tribal Secondary School Children in Rajasthan, Ph.D. Psy., Udaipur, U., 1976.*

The objectives of the study were: (i) to investigate into the status of inter-group attitude among children — Hindu, Muslim, Harijan and Tribal; (ii) to study the process of inter-group attitude formation among the children of above communities and to examine the role of parents and educational institutions in motivating discriminatory behaviour; (iii) to see the effect of age and grade level on inter-group attitudes; (iv) to investigate into the national attitude of children towards their own and other national groups; and (v) to study the relevance of some socio-economic factors in the process of attitude formation.

A preliminary study on a sample of 190 school boys was conducted. The final study involved 1120 school boys drawn from twentythree schools of Rajasthan. The schools were grouped into four types of management, namely, Hindu (N = 6), Muslim (N = 4), Secular (N = 7) and Government management (N = 6) schools. The tools administered were: (i) the Mehta's Authoritarian Behaviour Scale, (ii) the Mehta's Secular Attitude Scale, (iii) the Smith and Inkeles' Overall-Modernity Scale, (iv) the Mehta's In-Group Out-group Attitude Scale, (v) the Perceived Socialization Practices Inventory developed by the investigator, and (vi) personal biodata sheet. Mean, SD, t ratio, F ratio, correlation and factor analysis were employed to analyse the data.

The following were the findings of the study: (i) The children of all four communities indicated a high degree of in-group idealization. (ii) There were negative associations between secularity and variables which represented SES. (iii) There were positive associations

between secularity and out-group hostility and parochial environment. (iv) The home as well as school environments influenced authoritarianism, secularism, modernity and social prejudice in children. (v) Cross-national images of school children by community revealed more similarity. (vi) The children from lower age and grade showed favourable attitudes towards the out-groups than the children of higher age and grade groups. (vii) Fathers' educational level showed a negative linear relationship with the perceived parochial environment in the school. (viii) The ascribed middle class children showed consistently greater implicit and manifest authoritarianism than the achieved middle class children.

244. RAO, S. N., *The Study of Logical Thought Development in Children, SVU, 1975. (NCERT financed)*

The investigation was designed to study the transfer, if any, of conservation training of Length (L), Mass (M), Weight (W) and Number (N) on conservation of area and volume. The main objectives were : (i) to study the effect of conservation training of certain quantities on conservation of other quantities for which no training was given; and (ii) to examine the relative efficacy of the verbal and nonverbal training techniques in conservation training. Seven research hypotheses were framed as follows : (i) age of subjects would be significantly related to logical thinking involved in conservation performance; (ii) sex differences would not be significant in conservation performance; (iii) training would have significant influence on conservation performance; (iv) the type of training given would have significant influence on conservation performance; (v) the order of presentation of different quantities in the training procedure would not yield significant differences in conservation performance; (vi) there would be no transfer of training from one type of quantity to another, as for example, from mass to area; and (vii) there would be no significant difference between the high and low ability groups with regard to conservation performance.

The experimental design was 2 (sex) x 2 (techniques of training) x 5 (age levels) x 4 (order of training/testing) design. The sample consisted of 324 subjects in the age group of four to seven years. The subjects were assigned to the experimental and the control groups at random. The two training procedures employed were : (a) verbal training technique and (b) nonverbal training technique. The subjects were also administered the Raven's Coloured Progressive Matrices. ANOVA was employed to analyse the data.

The following were the main findings : (i) The

age of subjects was significantly related to conservation performance. Older children were able to perform better than younger children. (ii) There were no significant differences with regard to sex in conservation performances. (iii) Conservation training was found to be significantly influencing conservation performance of young children (four to six year age group). (iv) There was no transfer of conservation of thinking from one type of quantity to another. Training of conservation of L, M, W and N did not *ipso facto* lead to improvement of conservation of other quantities like area, volume, etc. (v) The verbal training technique was found to be comparatively better and more efficient procedure than the nonverbal technique in the training of conservation of different quantities. (vi) The subjects in the verbal training group performed consistently better than their counterparts in the nonverbal group. (vii) There was no significant difference in the performance of subjects receiving training or being tested in relation to the order of presentation of the quantities. (viii) The results showed that the high mental ability group profited more from training than the low mental ability group.

245. RAO, S. N., and REDDY, D. J., *An experimental investigation of Children's concepts of Mass, Weight and Volume, Post-graduate Teaching and Research Dept. of Psy., SVU, 1974. (ICSSR financed)*

The study was designed to test the interdependence of age, type of conservation and type of material. The study was forwarded on the basis of five hypotheses, namely, (i) the number of conservation responses would increase with the age of students; (ii) the kind of conservation response would vary significantly with the age level of students; (iii) the kind of conservation responses would vary significantly with the type of quantity, namely, mass, weight or volume; (iv) the responses of students would not significantly differ with regard to the type of material used in respect of any given quantity; and (v) there would be no significant difference between the conservation responses of students with high and low level of mental ability.

This was a laboratory study adopting a 2 x 2 x 9 x 6 design employing sex (2), socio-economic status (2), age levels (9), and conditions of testing (6) as the experimental variables. There were two replications in each cell. A total number of 432 children of age group four to eight years divided equally on sex, and high and low socio-economic status, were selected from municipal primary and private nursery schools located within the limits of Tirupati Municipality. The

entire sample was divided into nine agewise subgroups. Thus at each age level there were fortyeight children with equal number of boys and girls and equal number representing high and low socio-economic status. The variables studied were age, sex, socio-economic status, sex, mental ability, quantity (mass, weight and volume) with regard to conservation, and kinds of material (wooden 1" cubes, plasticene of six different colours, and plastic covered wire of six different colours). The sample was divided into two equal groups maintaining all the criteria mentioned above. One group was tested under the conditions in which the order of presentation of material was fixed and quantity was varied and in the second group the quantity was fixed and the presentation was varied. All students were tested individually in three sessions with an interval of one week between any two sessions. Each session was for thirty to forty minutes, and each student was shown the demonstration strictly in accordance with the laid down testing conditions. The students were asked to predict, judge and explain their responses. The students were divided into high ability and low ability groups depending upon their performance on a draw-a-man test which was administered at the end of the third session. The conservation responses were compared with the mental ability. The answers were assigned numerical scores and analysis of variance was used as the statistical method. The qualitative analysis of the responses was also made.

The study revealed that (i) the children were able to conserve mass and weight with ease around the age of seven years, but conservation of volume appeared at a much later age; (ii) it was difficult to judge pupils' responses as conserving or not without a laid down criterion; (iii) the pupils' verbal responses as 'same', 'no change' with inability to explain the answers created the confusion whether it was pseudo-conservation or lack of verbal fluency; (iv) the development of the concept of conservation was not smooth and gradual, but discontinuous; (v) the high and low ability students below the age of seven years did not significantly differ from each other with regard to conservation, but difference at older levels (between seven years and a half and eight years) was significant.

*246. RATH, R., *Cognitive Growth and Classroom Learning of the Primary School Children in Orissa — A Cross Cultural Analysis*, Dept. of Psy., Utkal U., 1972. (NCERT financed)

Intellectual and cognitive manifestations of 330 brahmin, scheduled caste and scheduled tribe children studying in five different primary schools of Orissa were compared.

All the samples were administered the following tests : (i) the Raven's Progressive Matrices to measure intelligence; (ii) the Rotters' Aspiration Test to measure a particular kind of level of aspiration and achievement; (iii) the Auditory Vigilance Test to measure attentional processes involved in signal detection and vigilance; (iv) the Stroop's Colour Word Interference Test to obtain an index of linguistic development; and (v) Verbal Concept Formation Tests to assess the range and quality of concepts based on the class IV language book. Marks secured by the children in the various school examinations in all the subjects of study were noted to assess their academic achievements. By interviewing all the children and their parents, the motivational and aspirational problems of the subjects and their parents were investigated. The family and parental educational background was assessed by finding out the educational attainment of all the members of the family. Attendance and stagnation of the subjects under investigation were also found out from the school records. The estimation of the teachers about the abilities, behaviour and future academic possibilities of the subjects was also attempted. The average time taken to administer all the tests on a single child and to interview him for filling up the questionnaire was 5.5 hours.

It was found that the brahmin children were younger by 9-10 months and were the most intelligent, closely followed by the scheduled tribe children. The tribal children were very ambitious and vigilant. The brahmin children were consistently better in verbal abilities and concept formation.

247. SAHU, S. L., *Need for Cognitive Consistency : the Effect of Time and Education*, Dept. of Psy., Utkal U., 1970. (UGC financed)

The present investigation aimed at finding out (i) if any initial inconsistency among cognitions existed when cognitions were in the formative stage; and (ii) if need for consistency increased with close temporal contiguity between the elicitation of two related cognitions.

The sample consisted of sixtytwo students of classes X and XI and sixtythree postgraduate students. A preliminary survey was conducted to know if school students had any cognitive development with regard to science and religion. But no such preliminary survey was done for postgraduate students. The design consisted of two temporal variations orthogonally combined with two educational variations. The Rath and Kar's Oriya versions of attitude scales were administered to the sample. The statistical techniques used

were the product-moment correlation, chi-square and analysis of variance.

The findings revealed : (i) there was a positive relationship between science and religious attitudes for four different groups of subjects when they were elicited with seven day time gap; (ii) For three other groups of subjects (school students with successive attitude measurement, postgraduate students with successive measurement, and postgraduate students with delayed measurement) the correlation coefficients were not significant; (iii) the 2 x 2 analysis of variance showed that education led to differences in subjects' attitudes towards science, but, it did not affect subjects' attitude towards religion; but temporal variations had a tendency to have significant effects in both the cases; (iv) significant difference was found among four correlation coefficients, two of the present study, one of Rath and Mishra, 1963, and one of Rath and Mohanty, 1969, obtained from postgraduate students; and (v) time factor had a tendency to affect in both the cases while interaction was not significant in case of science as well as in case of religion.

*248. SARASWATHI, T. S., *Production and Mediation Deficiency in Children's Free Recall*, Dept. of Child Development, MSU, 1975. (NCERT financed)

The purpose of the study was to explore the nature of recall deficiency of children on four conceptual categories of items pertaining to animals, fruits, clothing and vehicles, as also the extent to which aids for clustering increase the level of recall.

The sample included 30 school boys of the age-groups 5-6 years, 8-9 years and 12-13 years. The experimental research design comprised random distribution of these boys into three groups, viz., Control Group, Experimental Group I and Experimental Group II. The test-retest technique was adopted, followed by cued recall at the fourth trial. The analysis of variance in respect of the number of items correctly recalled on each trial, besides category clustering scores along Bousfield and Bousfield's measure of clustering, was computed.

The results revealed deficit in the young children's item recall and category organisation involving both production and mediation deficiency. Production deficiency was evident both within the age-group and between the age-group comparisons. It also showed that young children fail to spontaneously use category clustering as mediators in free recall.

*249. SARMA, H. N., *An Investigation into the Problem of Individual Difference into the Acade-*

mic Progress of Primary School Children of Jorhat Area in the District of Sibsagar, Ph.D. Edu., Gau. U., 1978.

The major objectives of the study were : (i) to observe the range of individual differences in abilities reflected in the academic progress of children during the course of primary education; (ii) to observe whether children maintain their individual differences in ability levels of achievement from grade to grade in the course of their academic progress; (iii) to observe the trend of achievement and variability of individual cases; (iv) to observe the impact of sex difference, environmental variations, teaching by trained and untrained teachers, school conditions and teaching facilities, multiple class teaching, individual attention by teachers and age variations on the problem.

The sample consisted of 300 children selected by stratified, proportionate, random manner. The data about the schools and the locality were collected through visits to schools. The data about parents' income, occupation, etc., were also collected. The chronological ages of children of Jorhat Town area were collected by consulting the horoscopes. Means, mean deviations, percentages of achievement test scores of pupils in each grade were found out. The significance of mean differences was found out by applying the t test. Coefficient of relative variability was also computed to find out the range of variability of different groups from one grade to another.

The major findings were : (i) The children at the primary stage did not maintain their academic progress according to the individual differences in abilities of achievement consistently from grade to grade. (ii) The progress of high achievers was significantly inconsistent. A trend of declining achievement and increasing variability was observed. (iii) The average achievers too showed a trend of decline in achievement and increase of variability, but less when compared to high achievers. (iv) The low achievers showed a unique trend of improvement in subsequent grades and variability like high achievers. (v) The variability in earlier grades of all the three groups tended to decline in subsequent years and at the end of the course. (vi) Sex differences, environmental variations and other variables, except individual attention by teachers, did not have significant and tangible effect on achievement of primary children.

*250. SEN GUPTA, M., *A Study of Some of the Determinants of Personality Characteristics of Preadolescent Children*, Ph.D. Edu., Cal. U., 1977.

This investigation aimed at studying children's

perception of parental socialization processes and their own mental growth or intelligence as affecting some of their personality characteristics. Three characteristics (both in urban and rural settings) studied were aggression, anxiety, and dependency of the children. The determinants considered in the study were the perception of children of their parents' support, control and punishment devices, and the intelligence of the children.

The above issues were studied indirectly from the fantasy responses of the children on the Bellack's Children Apperception Test. The intelligence scores were obtained through the Kapat's Intelligence Test. Parental support, control and punishment were studied by the Cornell Parent Behaviour Inventory.

The results of the study indicated that the determinants which were considered affected the three personality characteristics positively (mostly) and negatively (in some cases) but in mild form.

251. *SETH, M., A Psychological Study of Learning Process with Special Reference to Audio-Visual Aids, Ph.D. Psy., Kan. U., 1975.*

The study examined the following hypotheses : (i) the child with higher socio-economic status would tend to assimilate larger number of words as compared to the child of lower socio-economic status; (ii) a child with good physical health would tend to acquire a larger number of vocabulary than one in poor health; (iii) the children of working mothers would tend to have smaller vocabulary in comparison to the nonworking mothers; (iv) the only child would tend to acquire a larger number of vocabulary as compared to child with siblings; (v) the girls would tend to acquire a larger number of spoken words as compared to the boys; (vi) the children with high intelligence would tend to attain higher scores in language learning as compared to the children with low intelligence; and (vii) audiovisual aids would tend to increase the achievement scores of children with low intelligence as compared to the children with high intelligence.

One hundred and eight infants of working mothers were randomly selected for studying the process of speech. In the area of language learning sixty-three girls of ages ranging from 3+ to 5+ of Fatima Convent School, Kanpur, were studied and they were taught with the help of audiovisual aids. The research tools used included : (i) the Valentine's Intelligence Tests (Hindi version); (ii) observation; and (iii) the Kuppaswamy's Socio-Economic Status scale. The analysis of variance was used to see if the difference in the criterion variables were due to the influence of

various experimental variables. The t test was also used to see whether children of different SES or intelligence groups differed on the criterion scores.

The following were the main findings of the study : The child uttered his first word at the age of about one year. The vocabulary size was found to be very much influenced by the socio-economic status of the parents. Those who belonged to upper SES group learned to speak early and their vocabulary size was significantly bigger than that of the infants from lower SES group. The infants having very good health were not found to be significantly different in their mean number of words spoken from the infants having very poor health. The difference in the vocabulary size was not found to be significant amongst children of working or nonworking mothers. Vocabulary of infants having siblings did not differ significantly from those who did not have siblings. Intelligence was found to be highly correlated with the achievement of girls in language learning. Audiovisual aids were found to be more beneficial for girls of lower intelligence group as compared to the girls of higher intelligence group.

252. *SHARMA, C. M., Reactions to Frustration among Adolescents in the School Situations, Ph.D. Edu., Raj. U., 1973.*

The aim of the present study was to devise a separate Picture Frustration Test for adolescents using school situations on the basis of Rosenzweig's technique. The specific objectives of the study were : (i) to study the normal frustrating situations in the schools; (ii) to examine the reactions to frustration of the adolescents in the school situations; (iii) to study the developmental patterns of reactions to frustrations of the adolescents in the school situations; and (iv) to compare the categories of the new test with Pareek's and Madras PF Test together with the categories of both the sexes at different age levels.

School Situation Reaction to Frustration Test (SSRFT) was developed on the line of Rosenzweig's technique along with another teacher rating scale. Sentence completion method was adopted for the purpose of studying frustrating situations. In all 100 male and 100 female adolescents together with fifty teachers were selected by stratified random sampling. Twentyfour frustrating situations were selected for the construction of SSRFT. Concurrent validity, factorial validity and validity against teachers' ratings were attempted. The concurrent validity using the Muthaya's PF Test and the Indian Adaptation of the PF Test (Adult form) was found satisfactory. The scoring reliability ranged from 0.44 to 0.83 itemwise, whereas

according to age level it varied from 0.57 to 0.76. The test-retest reliability ranged from 0.21 to 0.71 for different categories.

The major findings of the study were as follows :

(i) The top ten frustrating situations for adolescents revealed in the study were — good players were not given good prizes, librarian refused to issue books, disturbance by classmates in the class, subject of choice not given, secrets were listened to by others, headmaster/headmistress refused admission, indiscipline in the school, noise in the cinema or theatre, classmates abused, and invigilator's accusation for copying. (ii) The needs involved in the frustrating situations were found to be aggression, in-avoidance, order, achievement, harm-avoidance, and dependence. (iii) Through factor analysis it was found that Ego-defence, Need-persistence and Obstacle-dominance were the prominent factors related to types of aggression at all the stages of development. (iv) It was found that different types (factors) of aggression showed a tendency of fluctuation in respect of age both in boys and girls.

*253. SHARMA, G. R., *A Study of Factors Underlying Adjustment Problems of Professional and Non-Professional College Students*, Ph.D. Edu., Mee. U., 1978.

The investigation concerned itself with the study of the factors underlying the adjustment problems of professional and non-professional college students. The scope of the study was limited to five adjustment areas, namely, home, health, social, emotional, and educational.

The professional group (N=520) consisted of law, education, medical and engineering students, while the non-professional group (N=510) consisted of arts, science and commerce students, all drawn from Meerut division. For extracting the factors associated with the adjustment problems of professional and non-professional college students, eightyfour extreme cases of highly adjusted and highly maladjusted students on the basis of normal probability curve were selected. The statistical differences in terms of their academic performance, interest, socio-economic status, self-respect and values were studied. In this regard the Sinha and Singh's Adjustment Inventory for College Students, the Singh's Interest Record, the Kulshrestha and Day's Socio-Economic Status Scale, and the Bhatnagar's adapted version of the Allport-Vernon-Lindzey Study of Values were used.

The study revealed that (i) the non-professional college students had more problems than the professional college students in the area of home problems;

(ii) the arts students had greater problems in home and health areas than the engineering students; (iii) the science students had greater problems in the area of home than the medical students; (iv) the medical students had greater problems in social, emotional and educational areas than the commerce students; and (v) the aesthetic and social interest, and socio-economic status contributed significantly towards the well-adjustment of professional college students.

*254. SINGH, P., *Process and Structure Variables of Educational Environment as Related to the Acquisition of Geometric Concepts*, Ph.D. Edu., Pan. U., 1977.

The study aimed at investigating the process and structure variables of educational environment as related to the acquisition of geometric concepts.

The study was conducted on a sample of 1019 students of both sexes. The tools used were the Raven's Standard Progressive Matrices, the Kuppaswamy's Socio-Economic Status Scale, the Grewal's Teacher Attitude Scale, the Geometrical Concept Test and the School Characteristics Index. The statistical techniques employed were factor analysis, and multivariate analysis.

Following were some of the conclusions drawn from the study: (i) Intelligence was a correlate of achievement on the geometrical concept test. (ii) Socio-economic status and achievement scores in geometry were significantly correlated with each other, but socio-economic status was a poor predictor of criterion variable, i.e., geometric concept. (iii) The size of the family and student achievement were independent of each other. (iv) The achievement on Geometric Concept Test was independent of the teacher's qualifications. (v) The teacher's qualification, experience, and class size when taken together were not good predictors of criterion variable. (vi) The curriculum press was a correlate of achievement on the Geometric Concept Test. (vii) The press of teaching methods and nature of student teacher interaction in the classroom shared a significant correlation with the achievement scores on the Geometric Concept Test. (viii) Press of curriculum activities was not significantly related to the performance on the Geometric Concept Test.

*255. SINGH, R. J., *An Investigation into the Psychological Make-up and Sociological Background of Creative and Non-Creative Student-Teachers*. Ph.D. Edu., Luc. U., 1977.

The present study was designed to compare high and low creativity groups of student teachers in terms

of value orientation, personality adjustment, teacher attitude, family background, age, sex, residence (rural-urban), marital status, religion and caste.

The sample consisted of 442 B.Ed. students in the city of Lucknow during the middle of the academic session 1974-75. From these 442 B.Ed. students, the two comparison groups, viz., the creative group — the subjects in the top twenty percent on creativity measures (N=89) and the non-creative group — the subjects in the bottom twenty percent on creativity measures (N=89) were formed. The tools used in the study were the Torrance Tests of Creative Thinking, the Ojha Study of Values, the California Test of Personality, the Minnesota Teacher Attitude Inventory and the information form designed to collect data about sociological background. The data were analysed by employing t test.

The study revealed that high creativity among student-teachers tended to go with higher economic value, better personality adjustment, better family background and urban living. Low creativity, on the other hand, seemed to be associated with higher theoretical value, poorer adjustment, poorer family background and rural living. Teacher attitude, sex, marital status, religion and caste did not seem to have significant differential effects upon high and low creativity among student-teachers.

*256. SOMAN, N. E., *A Study of Memory, Ph.D. Sanskrit, Poona U., 1976*

This thesis investigates the use of memory as a learning technique in the context of Sanskrit literature and culture.

'Memory is a complex process involving cultural and philosophical beliefs', says the researcher and hence chooses a phenomenological approach to the subject. The subject is divided into four categories and perceived from various points of view through these categories. These four categories are as follows : (i) Rote memory tradition, specially that of Vedas-In this section the researcher presents various beliefs gleaned from various sources which are all attempts to answer the question 'why'. (ii) Sastric material — The purpose of Sastras appears to be to develop a dialectical memory, that is, a 'means of investigation'. The unique Sastra literature has been examined here. (iii) Relevance of memory in metaphysical knowledge — Here, the metaphysical background is studied which would make the development of rote memory tradition and a dialectical tradition possible. (iv) Presentation of theoretical models of mind and its operation presented in Nyaya philosophy and Yoga philosophy

with an expansion of the concept of memory presented there.

The conclusions are : (i) Rote memory techniques and metaphysical memory techniques are intimately connected with Sastric material. (ii) Imprinting or the background from which there is no deviation as opposed to foreground presentation and energy-release signs are the goal of memory training and the direct manipulation of these is a unique feature of the Indian mnemonic techniques. (iii) The culture of memory was not merely part of learning process but it was intimately involved with the art of living itself. (iv) In the Western countries 'active feedback' has become a major technique. Active feedback has been used in India beginning with the learning of Vedas. Debate techniques are the very core of an active feedback learning situation and require excessive development of creative intellect and memory powers.

257. SOOD, J. K., *A Study of Attitudes towards Science and Scientists among various groups of Students and Teachers in India, Ph.D. Edu., Raj. U., 1974.*

The major objectives of the study were : (i) to construct an attitude scale so as to measure the differences of attitude towards science and scientists between male and female students and teachers; (ii) to determine the relationship between the students' and teachers' understanding of nature of science; (iii) to find out how far the favourable attitude of teachers helped developing favourable attitude of students towards science and scientists and in understanding the nature of science; and (iv) to ascertain how the attitude towards science and scientists was related to the socio-economic background of the students and teachers.

The sample of the study comprised 1,000 students and teachers. The students were selected from high socio-economic strata and from seven English medium schools of Delhi and Rajasthan respectively. An attitude scale, the Test on Understanding Science, Form W, (as developed by Cooley and Klopfer), the Socio-Economic Status Scale Questionnaire (SESSQ-Urban developed by Jalota, Pandey, Kapoor and Singh) were the tools of research. In addition, annual examination marks of the students were also used as data.

The major findings of the study were as follows : (i) The sample reflected positive attitude towards science and scientists which was significantly related to understanding science. (ii) The attitudes of students and teachers differed significantly. (iii) There was significant difference in attitude towards science and

scientists, between National Science Talent Search (NSTS) awardees and non-selected NSTS students. (iv) Sex difference was not significantly related to attitude towards science and scientists. (v) The difference in understanding the nature of science between science teachers and students was also not significant. (vi) NSTS students and science teachers from different states differed significantly in respect of understanding science. (vii) There was a significant difference between NSTS and non-NSTTS students regarding understanding science.

258. *SRIVASTAVA, L., An Investigation into Some Factors Underlying Concept of Learning, Ph.D. Psy., Pat. U., 1972.*

The study aimed at investigating the effects of the factors of intelligence, task complexity and instruction on the process and performance in verbal concept learning. The study forwarded a number of hypotheses relating verbal concept learning to the other variables under investigation.

For this study a factorial design with three factors at two levels each was adopted. The factors were intelligence, instruction and task complexity. The two levels of intelligence were considered separately by taking up randomised groups. By preliminary screening forty high intelligent and forty low intelligent subjects were chosen and on each intelligence level ten subjects were distributed to fill in the eight cells of the factorial experiment. Two levels of the factor of instruction were determined by the specificity or information regarding the nature of concept.

The following were the main findings of the study: (i) Performance in verbal concept learning was a function of the interaction between any two of the three factors but not among all the three. (ii) By observing sequence of responses, two types of goal approaching strategies were inferred, namely, utilised-trial strategy and waste-trial strategy. The results showed that utilised-trial followed by waste-trial strategy was a function of the interaction between intelligence and task complexity, intelligence and instruction, but not between instruction and task complexity, or among intelligence, task complexity and instruction. (iii) Waste-trial strategy was characterised by repetition of wrong responses or absence of responses or by both. The strategy in which wrong responses were respectively followed by absence of response and waste-trial, was not a function of intelligence or instruction, but of task complexity. Analysis of strategy by pattern of responses showed that it was not a function of intelligence or task complexity or instruction. (iv) The response generating period in verbal concept learning was not a

function of intelligence, but of task complexity. It was a function of instruction not in simple but in complex task only. (v) The response recognition period in verbal concept learning was a function of intelligence and task complexity but not of instruction.

259. *SRIVASTAVA, P. L., A Psycho--Social Study of Some Factors Associated with Interests of Boys and Girls, Ph.D., Kan. U., 1974.*

The purpose of this investigation was to study the interests of boys and girls studying in high school and intermediate classes. The hypothesis examined was that the two groups of boys and girls of high school and intermediate classes would not significantly differ in their interest.

The sample consisted of 500 students drawn randomly from seven higher secondary schools of Kanpur. The tools administered were: (i) the Jalota's General Intelligence Test; (ii) interest inventory; (iii) attitude scale; and (iv) sociometric test. The last three instruments were developed by the investigator.

The study revealed that (i) there was significant difference between the two groups of boys and girls in the field of mechanical, computational, persuasive, artistic, musical, social service, outdoor, scientific, library and classical fields; (ii) there was a positive correlation between the interests of boys and girls, and their attitude towards school subjects; (iii) high correlation was found between the interest of boys and girls, and their attitude towards their subject teachers; (iv) the correlation between the interest of boys and their parents' interest was high and positive while for girls it was low and negative; (v) the socio-economic status of parents had little bearing on the interest of either boys or girls; (vi) among accepted and rejected boys there was a significant difference in computational, scientific, persuasive and social service fields, and there was no significant difference in outdoor, mechanical, artistic, library, musical and classical fields; (vii) there was a significant difference for mechanical and classical fields in the case of accepted and rejected girls but there was no significant difference between the two groups in outdoor, computational, scientific, persuasive, artistic, library, musical and social service fields; (viii) the coefficient of correlation between intelligence and interest was 0.58 for boys' group and 0.35 for girls' group; (ix) the chi-square test in both the cases substantiated the conclusion that the foregoing relationship to be significant; (x) parental education had more effect on the interest of girls than on boys; and (xi) the correlation between interest of boys and girls and their achievement

in different school subjects was very high, viz., 0.75 and 0.78 for boys and girls respectively.

260. *SRIVASTAVA, S., Personality Patterns of Children of Criminal Tribes of U.P., Ph.D. Edu., BHU, 1974.*

The enquiry aimed at studying the personality patterns of the children of criminal tribes of U.P.

The sample for the study included 100 boys studying in Ashram type schools of Allahabad, Lucknow, and Kalyanpur settlement of Kanpur. They formed a group of children of ex-criminal tribes. Another group of eighty nontribal boys was selected from various schools of the same three cities as in the first group. This group acted as a control group. Both the groups were matched on IQ and socio-economic status. All the boys included in the two groups belonged to the age group of 13+ to 15+. The tools used in the study were the Kuppaswamy's Socio-Economic Status Scale, the Thematic Apperception Test, the Rorschach Inkblot Test and an adjustment inventory.

The study revealed that : (i) the children of criminal tribes possessed low intellectual ability; (ii) they had confidence, but were shy at social interactions; (iii) though not satisfied with their existing status, they were optimistic about their future; (iv) they tried to gratify their immediate needs though they were not impulsive; and (v) they had control over their emotions though they were inferior in their social adjustments.

*261. *SRIVASTAVA, S. S., Study of Creativity in relation to Neuroticism and Extraversion in High School Students, Ph.D. Edu., Pat. U., 1977.*

The important objectives of the study were : (i) to find out relation between extraversion and creativity; (ii) to find out the relationship between neuroticism and creativity; (iii) to find out whether the personality dimension of extraversion-neuroticism discriminates between the high and low creatives among high school students; (iv) to find out whether there is curvilinear relationship between extraversion and creativity and also between neuroticism and creativity; (v) to make subject group comparison of the performance of students on measure of creativity; (vi) to make urban-rural group comparison of the performance of students on the measure of creativity; (vii) to find out the impact of birth order on the creativity test score; (viii) to find out the influence of number of siblings on the creativity test score; (ix) to find out the influence of parental occupation on the creativity test score; (x) to find out the influence of parental education on the creativity test score; and (xi) to find out the influence

of parental income on the creativity test score.

On the basis of incidental purposive sampling technique, 543 urban and 354 rural students studying in class tenth of recognised high schools were included in the sample. Their mean age was 16.98 years. The tools that were used for the study were : (i) the Mehdi's Test of Creative Thinking (verbal) and (ii) Hindi Adaptation of the Eysenck Personality Inventory. The statistical techniques used were measures of central tendency, standard deviation, analysis of variance, t test, and product-moment correlation coefficients.

The major findings of the study were : (i) There was no significant correlation between neuroticism-extraversion, fluency, flexibility, originality and total creativity. (ii) Neuroticism-extraversion were found to have no curvilinear relationship with creativity. (iii) Science students were significantly higher on creativity scores in comparison to their counterparts in arts and commerce groups. (iv) Urban students were significantly higher in creativity than rural students. (v) The birth order of the subject was found to have no impact on creativity scores. (vi) The number of siblings in the family was positively and significantly correlated with creativity scores. (vii) Students belonging to urbanised agriculture occupation group were significantly higher than students belonging to labour service and business groups on creativity scores. (viii) The students belonging to high income group were significantly high on creativity test in comparison to middle and low income groups. (ix) Children of highly educated parents scored significantly higher than the children of less educated persons on creativity test.

*262. *SUDHA, B. G., A Study of a Few Socio-Psychological Factors in Relation to the Problems of Adolescent Girls of the Age Group Ten to Sixteen, Ph.D. Edu., Ban. U., 1978.*

The study aimed at exploring the problems faced by the girls of age ten to sixteen years by analysing the intensity of problems in ten areas in relation to their community (rural-urban), religion (Hindu-Muslim-Christian), socio-economic status, parental expectations (career-marriage), and the personality traits of ascendancy, responsibility, emotional stability, sociability, vigour, original thinking, cautiousness and personal relations.

The sample studied was 1400 girls (200 from each age group), who were drawn from classes of V to XI (I P.U.C.) standards from 120 institutions by stratified proportionate random sampling technique. The corresponding 1400 parents were also included. Four tools were developed and used in the study. They were : (i) the Adolescent Girls Problem Inven-

tory (AGPI) to measure the intensity of problems in ten areas — Health, Growth and Development (HGP); Personal Inadequacies (PI); Social Relationships (SR); Adjustment (ADJ); Aspiration and Life-Goals (ALG); Recreation (RC); Moral, Religious and Spiritual (MRS); Academic Achievement (AA); Cultural and Traditional Customs (CTC); and Finance and other Economic Issues (FEI); the indices of reliability by various methods ranged from 0.778 to 0.912; it had the validity coefficients against Mooney's Problem Check List ranging from 0.35 to 0.64; (ii) the Parental Expectation Scale which had the reliability coefficients ranging from 0.80 to 0.90 and the indices of validity ranging from 0.59 to 0.66; (iii) the Personality Trait Scale (on the lines of Guttman) which had its reliability indices ranging from 0.40 to 0.73 and the validity coefficients against the Rangachar Satyamurthy Selection Battery ranging from 0.22 to 0.42; and (iv) the Socio-Economic Status Scale which had an index of reliability of 0.93 and had the validity index against the Kuppaswamy's SES scale as 0.86. The data were analysed by using two-way analysis of variance, standard partial regression coefficients and chi-square.

The major findings of the study were: (i) The girls of age fourteen to sixteen had more intensity of problems on life — goals, moral, religious and spiritual matters, academic achievement and traditional-cultural customs than the girls of lower age group. (ii) Rural girls were found to face more intense problems than the urban girls in almost all areas, the greatest concern being the matters of moral, religious, spiritual and recreation. (iii) Hindu girls were found to have more intensity of problems than the other two groups of girls, while Christian girls had the least in most of the areas. (iv) Generally it was found that the girls from the lower SES slabs had more problems than the middle SES girls, the high SES girls having the least intensity of problems. (v) High career expectation resulted in higher intensity of problems among the girls, but no difference was found in the case of differential marriage expectation. (vi) The general trend noticed regarding the personality traits was that lower the personality traits higher was the intensity of problems, except in case of responsibility and cautiousness, in which the high traits resulted in higher intensity of problems of moral, religious and spiritual matters. (vii) The interaction effect in the case of community and religion with other factors was found to be significant.

263. SURI, S. P., *A Study of Differential Personality Traits in Intellectually Superior, Average*

and Below Average Students, Ph.D. Edu., Kur. U., 1973.

The objectives of the study were: (i) to find out differential personality traits of intellectually superior, average and below average students under matched conditions of socio-economic status; (ii) to find out differential personality traits of intellectually superior, average and below average boys and girls separately under matched conditions of socio-economic status; (iii) to explore sexwise differences, if any, between intellectually superior boys versus superior girls, average boys versus average girls and below average boys versus below average girls under matched conditions of socio-economic status; and (iv) to conduct intensive case studies of extreme cases as supplementary data for finding out the dynamics of their personality.

This study was conducted on school students. The tools used were: (i) the Aligarh Verbal Intelligence Test; (ii) the HSPQ Test; (iii) the Kuppaswamy's Socio-Economic Status Scale; (iv) the Non-Directive Interview Schedule; and (v) the Rorschach Psycho-Diagnostic Test. The data were analysed by employing one way analysis of variance.

The major findings of the study were: (i) the superior students differed from the average and below average and were found to be more intelligent, emotionally stable, assertive, venturesome, tough minded, placid, controlled and relaxed while the average and below average students were found to be less intelligent, affected by feeling, obedient, expedient, shy, tender minded, apprehensive, indisciplined, self conflicted and tense; (ii) the average students were found to be more intelligent, more assertive and relaxed than the below average students; (iii) the superiors were more intelligent, emotionally stable, tough minded, placid, controlled and relaxed while the average boys were less intelligent, more affected by feelings, expedient, tender minded, apprehensive, indisciplined, self conflicted and tense; (iv) the superior girls were intelligent, assertive, venturesome, relaxed, and emotionally stable than average and below average girls; (v) superior boys in comparison to superior girls were tender minded; (vi) average boys were more emotionally stable and conscientious as compared to average girls; and (vii) below average boys were obedient, conscientious and tender minded as compared to below average girls.

264. THAKUR, R. C., *Effects of Knowledge of Results upon Verbal and Motor Learning of High and Low Anxious Subjects, Ph.D. Psy., Bih. U., 1971.*

The main purpose of the present investigation

was to study the effect of knowledge of results (KR) upon verbal and motor learning of high and low anxious subjects when that knowledge was to be provided after different intervals of time.

In order to determine the effects of the treatment variables upon the two criterion variables of verbal and motor learning, two separate experiments employing factorial design with repeated measures were conducted. A sample of 165 students — eightyfive with high anxiety (HA), and eighty with low anxiety (LA) — served as subjects for verbal learning experiment. Another sample of eightyfive students (fortyfive HA and forty LA) served as subjects for motor learning experiment. In order to identify HA and LA groups the Hindi adapted version of the Taylor Manifest Anxiety Scale was used. The verbal and motor learning tasks were developed and used in the two experiments. The treatment variable of knowledge of results was varied on the dimension of immediate and delayed KR. The data were analysed by employing ANOVA followed by t test.

The major findings were : (i) the amounts of trial, error, and time for verbal learning under 'with KR conditions' (WKR) were less than under 'no KR conditions' (NKR); (ii) the mean trial, error, and time related to verbal learning under all the three delayed KR conditions were greater than those in nondelayed conditions; (iii) HA subjects took more trials, committed more errors and took more time in learning verbal tasks than LA subjects; (iv) KR facilitated the verbal learning of both the HA and LA subjects; (v) the verbal learning of both HA and LA subjects was most efficient when immediate KR was provided; (vi) motor learning under WKR conditions was higher than that under NKR conditions; (vii) delayed KR reduced motor learning scores; (viii) the motor learning of HA subjects was found to be less efficient than that of LA subjects; (ix) KR facilitated the motor learning of HA subjects significantly more than that of the LA subjects; and (x) the motor learning of both the HA and LA subjects was maximum when the KR was provided immediately after the response.

*265. TIWARI, S. N., *A Comparative Study of Personality of High School Boys and Girls, Ph.D. Edu., Gor. U., 1977.*

The important objectives of the study were : (i) to study the 'means' of various personality traits of high school boys and girls of urban and rural areas; (ii) to compare these means areawise and sexwise by employing the critical ratio technique; (iii) to study the effect of sex, area and their interaction on personality

traits through the two-way analysis of variance technique.

The sample consisted of 200 girls and 300 boys of class X, each from rural and urban areas. Thus the total number of students was 1000. The traits of intelligence, sociability and adjustability were measured by using (i) the Test of General Mental Ability (by M. C. Joshi), (ii) the Personality Inventory (by J. Singh), and (iii) the Asthana's Adjustment Inventory. A questionnaire was prepared by the investigator to measure the three traits, viz., industriousness, sound health and discipline. The statistical techniques used to analyse the data were mean, standard deviation, critical ratio and two-way analysis of variance.

The major findings of the study were as follows : (i) Boys were found excelling girls and urban students were superior to their rural counterparts in intelligence. (ii) In sociability, girls were superior to boys and urban students were superior to rural students. (iii) Boys were more adjusted in comparison to girls. (iv) Boys were superior to girls in industriousness. But there was no significant difference between urban and rural students. (v) As regards discipline, no significant difference was found either in sex or area. (vi) Girls of Gorakhpur region were superior in health to boys and urban students were superior to rural ones.

*266. TRIPATHI, K. K., *Frustration Among School Going Children and Adolescents, Ph.D. Edu., Gor. U., 1978.*

The objectives of the study were : (i) to study frustration among school going children and adolescents under different conditions (curricular learning, home situation, social situations, physical and health condition); (ii) to study the degree of relationship between frustration and related factors. i.e., intelligence, socio-economic conditions, and personality of the children and adolescents; (iii) to make a comparative study of scholastic attainment of highly and mildly frustrated children and adolescents; and (iv) to make a comparative study of reaction pattern of boys and girls to frustrating situations.

A sample of 500 boys and 300 girls studying in classes VII, VIII, X and XI was drawn by employing cluster sampling technique. The data were collected by administering the Joshi's Group Test of General Mental Ability, the Kuppaswami's Socio-Economic Status Scale (urban), the Nemaun-Kohlstd's Test for Introversion-Extroversion, the Diwedi's Personality Type Test, the Pareek's Picture Frustration Study Test, and a frustration questionnaire developed by the investigator. The data were analysed by computing

mean, standard deviation, correlation and critical ratio.

The study revealed: (i) Both boys and girls were frustrated and there was no significant sex difference. (ii) Intelligence appeared to be one of the factors related to frustration. (iii) Socio-economic status was related to frustration in the case of both boys and girls. (iv) Introverted boys and girls were more susceptible to frustration. (v) Physical handicap and poor health developed frustration in the students of both sexes. (vi) Frustration affected scholastic achievement and poor scholastic achievement caused frustration. (vii) Girls showed more group conformity.

267. VAIDYA, N., *A Study of Some Aspects of Thinking among Science Students of Adolescent Age*, Ph.D. Edu., Raj. U., 1974.

The main objectives of the present study were: (i) to study thinking (problem solving) process evoked by individual problems, containing a continuous chain of reasoning; (ii) to study the same processes when appropriately grouped, regardless of the typology of problems; (iii) to examine errors as they occurred in solving these problems; (iv) to determine the relationships between scores on thinking and some outside variables like intelligence, sex, various immediate test reactions to the problems on presentation, and adjustment; (v) to find out the characteristics of successful and unsuccessful problem-solvers; and (vi) to factorially analyse the structure of the appropriately grouped processes of thought and interpret them psychologically. Based on the above objectives a few hypotheses were formulated relating to the variables of the study.

The sample of the study comprised 100 boys and 100 girls of the age group ten to fifteen years, selected from the grades VI through X on the basis of intelligence and SES. Pupils within each subsample (twenty boys and twenty girls) and across five substamples were matched on intelligence and socio-economic status which were respectively measured by the Jalota's Group Mental Ability Test and the Kuppaswamy's Socio-Economic Status Scale. Seventeen problems containing continuous chain of reasoning were finally included in the study. These seventeen problems could be analysed in terms of thinking process and could ultimately be broken down into seventeen schemes of thought. This instrument was administered individually in two sessions. Reliability and validity coefficients of the instrument were within the range of acceptable values. The Saxena's Adjustment Inventory was another tool used in this study. In analysing data, descriptive sta-

tistics like mean, standard deviation, percentage, standard scores and correlation were computed, and t test and factor analysis were utilised.

The major findings of the study were as follows: (i) Except occasional fluctuations, average performance on each problem increased with grade. Mean performance in most cases favoured boys rather than girls. Boys and girls tried hard to equalise their performance as they went up the grades. (ii) Each pupil solved problem in his/her own unique way except when the problem was solved mechanically. (iii) It was possible to identify stages in the solution of any problem empirically. (iv) Pupils committed many errors specially when they ignored or forgot or failed to grasp the main demand or requirement of the problem. (v) Pupils belonging to the grades of VI through IX failed to generalise their thinking to algebraic symbols (with the exception of very few). (vi) Depending upon the nature of the problem, adolescent pupils, contrary to Piaget, were affected to a varying degree by the content of the problem. The percentage of pupils so affected by the content, however, declined with age. (vii) In solving problems, very many times the adolescent pupils failed to take the logical way of attacking it. (viii) It was a telling comment on our science education, especially general science, that while proposing tests, pupils made little use of their textbook knowledge in solving simple problems. (ix) If adolescent pupils were in a position to set up hypotheses, they also, contrary to Piaget's viewpoint, made comments in the form of arbitrary errors which had nothing to do with the solution of the problem. (x) Barring a few fluctuating cases, the ability to test hypotheses did not appear among pupils from grades VI to VIII. The data indicated that more than seventy percent pupils of grade X could not manifest the ability to test hypotheses which meant that, to that extent, the individual minds of even grade X children had not become experimental. (xi) Adolescent pupils asked all sorts of questions, some of them were quite simple and others were not questions at all. (xii) Problem solving, largely speaking, favoured boys rather than girls. (xiii) Teacher evidence when collected showed that unsuccessful problem-solvers were highly distractible, showed poor concentration and were little interested in school work.

268. VERMA, P., *The Effect of Anxiety, Task Difficulty, and Reinforcement on Paired Associate Learning at Three Levels of Intelligence*, Ph.D. Psy., Pan. U., 1973.

The main purpose of the investigation was to test the following hypotheses: (i) On the easy task, high

anxiety (HA) subjects would perform better than low anxiety (LA) subjects at all levels of intelligence; (ii) on the difficult task, high anxiety subjects would perform better than low anxiety subjects at upper level of intelligence, whereas at middle and lower levels of intelligence, anxiety would interfere with the performance of high anxiety subjects; (iii) on both the tasks, high anxiety subjects would show better performance than low anxiety subjects under praise than reproof and praise plus reproof; (iv) on both the tasks, high anxiety subjects would perform better than low anxiety subjects under praise; and (v) on both the tasks low anxiety subjects would show better performance than high anxiety subjects under reproof, and praise plus reproof.

The sample consisted of 504 subjects studying in class IX in various schools of Chandigarh. They were selected on the basis of their test anxiety scores. In order to test the hypotheses, a factorial design (2 x 3 x 3) was used with two groups of anxiety (high and low), three reinforcement conditions (praise, reproof and praise plus reproof) and three levels of intelligence (high, middle and low) for each of the tasks (easy and difficult). The tools used were: Hindi version of the Sarason's Anxiety Scale for Children, the Raven's Standard Progressive Matrices and two lists of twelve Hindi paired associates. The data were analysed by employing analysis of variance.

The study had the following major findings: (i) On the easy task, significant anxiety x intelligence interaction showed that anxiety facilitated learning of subjects belonging to the upper and middle levels of intelligence, and the results were not significant at lower levels. (ii) On the difficult task, significant anxiety x intelligence interaction revealed that difference between the performance of HA and LA subjects were not significant at upper and middle levels, whereas anxiety impaired learning at lower level. (iii) On easy task, significant anxiety x reinforcement interaction showed that, under praise and praise plus reproof, the performance of HA subjects was better than that of LA subjects, while under reproof LA subjects performed at a higher level than HA subjects. (iv) On the easy task, significant anxiety x intelligence x reinforcement interaction indicated that the results of anxiety x reinforcement interaction held for the subjects of lower level of intelligence only. At upper level, difference in HA and LA groups were not significant under any of the reinforcement conditions. At middle level, HA subjects performed better than LA subjects under praise, and differences between the two anxiety groups under reproof and praise plus reproof

were not significant. (v) On the difficult task, significant anxiety x reinforcement interaction revealed that the differences between the performance of HA and LA subjects under praise were not significant, whereas under reproof LA subjects did better than HA subjects. (vi) On the difficult task, significant anxiety x intelligence x reinforcement interaction showed that the differences in the performance of HA and LA subjects were significant at upper level. At middle level, anxiety did not affect performance under praise. At lower level, LA subjects performed better than HA subjects under all the conditions though the differences were larger under reproof, and praise plus reproof than under praise. (vii) On the easy task, significant reinforcement x intelligence interaction indicated that reinforcement was an insignificant factor in affecting the performance at upper and middle levels. At lower level, HA subjects performed better under praise and praise plus reproof than under reproof, whereas LA subjects performed better under reproof than under praise or praise plus reproof. (viii) On the difficult task, significant reinforcement x intelligence interaction showed that reinforcement was not a significant factor in affecting the performance of high intelligence group. At middle level, HA subjects did better under praise than under reproof, or praise plus reproof. The results for the LA subjects were not significant. At lower level, the differences in the performances of HA subjects working under different reinforcement conditions were not significant, whereas LA subjects showed better performance under reproof than under praise, or praise plus reproof.

269. VERMA, R. S., *A Factor Analytic Study of Divergent Thinking in relation to certain Personality Dimensions of Higher Secondary School Adolescents*, Ph.D. Edu., AMU, 1973.

The study intended: (i) to develop a battery of tests of divergent thinking for adolescent boys and girls in different areas; (ii) to explore the patterns of growth of divergent thinking ability during adolescence; (iii) to select the tests of divergent thinking and eliminate those that did not measure this ability as a distinct and cohesive cognition domain; (iv) to study the factors of divergent thinking ability in the adolescent boys and girls at the age 17+; (v) to study the personality concomitants of divergent thinking factors; and (vi) to study the dependence of personality dimensions, taken separately, on the factors of divergent thinking.

The study was carried out in two stages. Normative survey was adopted in the study. The sample at the two stages was drawn from clusters of selected

adolescents studying in A grade schools and public schools of Rajasthan State. In all 100 students were selected for the first stage and 540 students were selected for the final stage of the study. The following tools were administered to the above sample : (i) the Banasthali Vidyapeeth Socio-Economic Status Scale, (ii) the Jalota Group Test of Intelligence, (iii) the Word Fluency Test, (iv) the Controlled Association Test, (v) the Number Rules Test, (vi) the Sentence Construction Test, (vii) the Word Grouping Test, (viii) the Multiple Grouping Test, (ix) the Similarities Test, (x) the Figural Similarities Test, (xi) the Utility Test, (xii) the Remote Consequence Test, (xiii) the Plot Tiffes Test, (xiv) the Picture Drawing Test, (xv) the Circle Test, (xvi) the A-D Scale (Dependence-Autonomy), (xvii) the C-scale (Conformity-nonconformity), (xviii) the ES Scale (Strong-weak ego), and (xix) the D-Scale (Closed-openness of mind). The battery of tests of divergent thinking for schoolgoing adolescents was developed on the lines of Guilford, Getzel and Jackson, Wallach and Kogan and Torrance. Item validity and reliability coefficients were established by correlating the scores on an item with the total scores and by applying Rulon's formula, split-half method and inter-score technique.

The findings of the study revealed the following facts : (i) autonomy, nonconformity, and openness of mind were functionally related to the abilities of divergent thinking; (ii) the effect of divergent thinking on ego strength was little; (iii) autonomy, nonconformity and openness of mind could be developed along with the divergent thinking abilities by appropriate plans of school education; and (iv) autonomy, nonconformity and openness of mind could help in understanding the divergent thinking of adolescents by regarding them as potentially creative persons and differentiating them from nonpotential creative persons.

270. *VIBHA, Study of Relationship of Learning with Fluid and Crystallized Intelligence Test Scores of the High School Children, Ph.D. Psy., Pan. U., 1974.*

The present study aimed at evaluating the relationship of well controlled miniature learning situations with measures of fluid and crystallised intelligence. The main hypotheses were : (i) miniature learning tasks involving verbal mediation and associated with school learning (paired associate learning) would show higher correlation with measures of G_c than with those of G_f ; (ii) miniature learning tasks of rote type and unassociated with school learning (serial learning) would show higher correlations with measures of G_f than with those of G_c ; and (iii) reliable digit

learning task would correlate significantly with both of G_f and G_c measures. Five measures of academic achievement were also included to locate 'real-life' correlates of the laboratory learning tasks. Some personality factors were used to study their effect on the correlation between the measures of intelligence and the learning ability.

The sample consisted of 245 boys from class IX. The age of the boys ranged from twelve to sixteen years. The data were collected by using the following tools : (i) the Hundal's General Mental Ability Test (Hindi version); (ii) the Junior Personality Inventory (Hindi version); (iii) the 16 PF Questionnaire (only factors A, G, L, and Q_2); and (iv) the IPAT Culture-Fair Intelligence Test, Scale 2, Form A. Paired associate, serial, and digit learning were used as the measures of learning. The ten learning tasks representing the three learning variables were paired associate-verbal₁ (nonsense syllables), paired associate-verbal₂ (nonsense syllables — meaningful words), paired associate-verbal₃ (meaningful words), paired associate-figural, paired associate-numerical, serial learning-verbal₁ (nonsense syllables), serial learning-verbal₂ (meaningful words), serial learning-figural, serial learning-numerical, and digit learning. The five indices of academic achievement were marks in mathematics, social studies, languages, sciences, and aggregate marks. Height and weight of boys were taken from school records. To see the adequacy of the learning tasks, and trialwise progress, learning curves were plotted for paired associate and serial learning tasks; digit learning being single trial learning, no curve was drawn for it. Intercorrelation analyses were done for all the 265 subjects, average scores on extraversion, average scores on neuroticism, and average scores on factors A and G of the 16 PF. Analyses were done to find the structural relationships among the learning variables and other variables used in the study.

The findings were as follows : (i) It was found that serial learning and paired associate tasks were moderately correlated (mean $r = 0.5$). However, the results supported the first and the third hypotheses, whereas the second hypothesis was rejected and instead it was maintained that G_f and G_c measures showed similar relationships with serial learning tasks. Similar information was obtained from all the remaining intercorrelation analyses. (ii) By employing principal component factor analysis, three factors were extracted and rotated using the varimax criterion of simple structure. Only the first factor of unrotated factor matrix was interpreted and was named as General Factor of Learning. The rotated factors were named

as Learning Ability, Figural Learning, and Digit Learning. (iii) Tucker's interbattery method of factor analysis was applied to the intercorrelations between the learning and the intelligence measures. Two factors were extracted from each battery and subjected to both varimax and promax oblique rotation criteria of simple structure. The four factors were named as: (a) Crystallized Intelligence, (b) Fluid Intelligence, (c) Verbal Mediation Learning, and (d) Serial Rote Learning. The correlation of factor (a) with factor (c) was significantly higher than that of factor (b) with factor (c), whereas the difference between the correlations of factor (a) with factor (d) and factor (b) with factor (d) was in the expected direction. This confirmed the first and the second hypotheses of the study. The digit learning test had more or less comparable loadings on factors (c) and (d) proving thereby the third hypothesis also. (iv) A 34 x 34 intercorrelation matrix was subjected to principal component factor analysis. Eleven factors were extracted and rotated to the varimax criterion of simple structure. Only one unrotated factor was interpreted and named as Intellectual Ability. The rotated factors were named as Learning Ability, Scholastic Achievement, Crystallized Intelligence, Verbal Comprehension, Fluid Intelligence, Body Measure, Expediency, Emotionality, and Digit Learning. The factors X and XI were not interpreted, as each had loadings as only one variable. (v) Attempts were made to predict academic achievement in various subjects, using some of the laboratory learning tasks, measures of Gf and Gc, and personality factors, separately or jointly as predictors. The separate analyses did not help much in prediction. But in a comprehensive approach, the multiple correlations ranged between 0.55 and 0.69, and this was substantial improvement on all the other combinations tried in the study. The Culture Fair Intelligence Test proved to be the best predictor and the General Mental Ability Test contributed minimum. Intelligence and the learning task had the positive weights, whereas factor A of the 16 PF had the negative weight. And, using the regression equations, predictions were done for various subjects and validity coefficients ranged between 0.42 and 0.50. These values were comparable with what was generally observed in such situations.

*271. *VISVESVARAN, H., Learning of Teaching Items in English in the Upper Primary Classes in Coimbatore District, Ph.D. Edu., Madras U., 1975.*

The objective of the study was to critically examine the learning of teaching items in English in the upper primary classes in Coimbatore district.

A stratified random sample of 460 students of standard VII, 462 students of standard VIII, and 493 students of standard IX was drawn. Achievement tests in English based on the teaching units of standards VI, VII, and VIII were constructed and administered in the beginning of the year to the students of standards VII, VIII, and IX respectively. The errors were analysed itemwise. This was followed by remedial treatment. Comparable tests were administered to check up the effectiveness of the remedial work.

The study revealed the following: (i) The performance of the students who underwent the remedial work improved after the treatments; (ii) the achievement of the girls in standards VII and VIII was significantly superior to that of the boys; (iii) the achievement of the pupils in standards VII and VIII in urban schools was significantly superior to that of their rural counterparts; (iv) the achievement of the pupils studying in schools under private management was significantly superior to that of the pupils studying in schools under public management; (v) there was a significant correlation between (a) test scores and the economic status of their parents, (b) test scores and the occupational status of their parents, and (c) test scores and the educational status of their parents, and (vi) among the four language skills, namely, listening, speaking, reading, and writing, the students showed a strong liking to develop speaking skill.

272. *WIG, N. N., and NAGPAL, R. N., Mental Health And Academic Achievement — A Comparison of Successful and Failed Students, Postgraduate Medical Research Institute, Chandigarh, 1971. (ICMR financed)*

The aims of the study were: (i) to examine some of the social characteristics and personality attributes of a group of unsuccessful students; and (ii) to make an assessment of the students' mental health on the criteria of their present as well as past adjustment vis-a-vis their academic achievement.

The sample consisted of eightytwo students of age group nineteen to twentyfour years. Out of these, fortyone students were selected from a group who had failed in 1966-67 and had rejoined the university. The rest, fortyone students, were those who had passed in 1966-67. The tools administered to the above sample were: (i) the Hindi and Punjabi versions of the Maudsley Personality Inventory, (ii) the Cornell Medical Index Health Questionnaire (CMI), and (iii) a self administered social questionnaire, and (iv) interview on the model of psychiatric case history. Mean, SD, t test and chi-square were used for analysing the data.

The following were the findings of the study : The scores of the two groups were significantly different on the physical distress (A-L scale) of the Cornell Medical Index Health Questionnaire. Scores on the M-R as well as A-R scales of CMI were higher for the failing group. The mean scores on neuroticism and extraversion scales of the Maudsley Personality Inventory were not different. In father's education, the control (successful) students were significantly more represented in the category of university/ professionally educated fathers. In history of failures at college, the research group (fail) students were sig-

nificantly more represented in the category of one or more failure at college. The two groups were significantly different on mental health score; failure group was having a higher mean score than the control group. The differences were most marked in the areas, viz., school adjustment, college adjustment, and home adjustment followed by the areas of social adjustment and neurotic traits in childhood. The areas which seemed to be noncontributory were parental deprivation during the preschool period and sexual adjustment.
