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Guidance and Counselling

A Trend Report

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INTRODUCTION

In the West, guidance movement began with the establishment of a bureau for helping young people choose occupations and plan their careers in the year 1908 by Frank Parsons in Boston (U.S.A.). Since then there has been tremendous growth of this movement all over the United States as well as the advanced European countries. In India this is more or less a post-independence movement, though as early as in 1938, a section of Applied Psychology was established in the Calcutta University. The educationists, the psychologists, and the Government began thinking over this idea which was subsequently incorporated into the report of the Secondary Education Commission (1952). During the early fifties the Central Bureau of Educational and Vocational Guidance and several such bureaux in important states were set up for service to school pupils and also for training and research. Directorate General of Resettlement and Employment (D.G.R.E.) set up a unit for dissemination of occupational information. Youth employment offices were set up and attached to the employment exchanges during the Second Five Year Plan period, for helping especially the school leavers. University counselling centre was also started, on an experimental basis, in one of the universities for helping students at the level of higher education. Most of the universities now have University Employment Information and Guidance Bureaux for rendering a limited number of services to needy students. The National Council of Educational Research and Training (NCERT) in which the Central Bureau of Educational and Vocational Guidance was merged, the state bureaux

and some universities run courses for training guidance personnel at various levels. Subsequent to the publication of the Secondary Education Commission's report some of the states in the country introduced the system of multipurpose and higher secondary schools and appointed psychologists or career masters to look after the guidance programmes. In addition to these, several private as well as public institutions were started to cater to the needs of special groups of children such as the mentally retarded, the physically handicapped and those with behaviour problems.

All these activities during the last twenty years or so point out to the volume of growth in this field. The various agencies engaged in this movement have often been required to engage into research activities of various kinds arising out of their day to day needs or out of their theoretical inclinations. The agencies like the Ministry of Education, the University Grants Commission and the National Council of Educational Research and Training have often financed research projects by the teachers in universities and colleges of education, connected with the problems of guidance and counselling. The postgraduate students in the field of education and psychology have also been working on problems of guidance for their dissertations or theses, either at master's degree level or at the doctoral level.

All the above activities have given rise to a volume of research work that is quite large and impressive. The main problem, however, has been that there is lot of needless duplication which is mainly because of difficulties in the communication of work and the absence of a central clearing-house

of information. This has also resulted in neglect of some areas in the absence of any coordinating agency. An attempt is made in the following review to bring together the available information on the accomplished research, to point out the neglected areas and to suggest the priorities.

THE LITERATURE ON GUIDANCE IN INDIA

The literature on guidance consists of a few books, articles published in the *Journal of Vocational and Educational Guidance*, the articles published in other journals of education and psychology, and a few monographs and pamphlets* published by the State Bureaux of Guidance, the NCERT and a few other agencies. Some literature is available in the form of unpublished doctoral theses and masters' dissertations. The present report discusses mainly the research in this area.

The research literature on guidance can roughly be divided into the following main broad areas:

- i) Research on developmental aspects;
- ii) Research on interests and vocational choices;
- iii) Research regarding tests;
- iv) Research on exceptional children;
- v) Some descriptive and correlational studies.

Research on Developmental Aspects

Phatak (1963) made an exploratory longitudinal study of children studying in the first and fourth grades of the University Experimental School of Baroda. The changes over a period of seven months were recorded with respect to height, weight, intelligence, creativity and social behaviour. Mitra (1968) undertook a longitudinal study of educational, social and emotional development of a small group of children. The sample consisted of twenty children and the data were gathered through interview with the mothers, home visits by the investigator, observation of children and school records. Muralidharan (1971) studied motor development of Indian children with a view to determining developmental norms from the age of two and a half years to five years. She also investigated the growth differences on account of sex, area of residence—urban, rural and industrial—and differences between the Indian children and those studied by Gessel in the U.S.A. Ganguly (1965) undertook a study of intellectual development under different educational systems. He tested the hypothesis that the quality of schooling makes a difference for an individual in his/her intel-

lectual performance. His subjects were 180 boys aged 13 to 15 studying in pre-matriculation classes under three different systems. Rastogi (1967) made a similar study as Ganguly's taking eightyfour students from age group 12 to 14 years studying in grade VIII. For comparison he chose convent schools with English medium, higher secondary schools of Allahabad Board and Municipal schools. A battery of ten tests constructed and standardised in Indian situation by Chowdhary and one British test were used as tools and the data was factor analysed. Parameswaran, Reddy and Rao (1968) made a diagnostic study of the aptitudes of college students to find out (i) whether students in the science and engineering courses had the necessary aptitude; (ii) the extent to which courses preferred by students were in consonance with their aptitudes; (iii) whether students' educational and vocational preferences were related to their aptitudes and (iv) the performance of the Osmania University students as against that of comparable American students. Sharma (1967) made a cross-sectional study of stabilisation of abilities in the adolescence period. The main objectives of this study were: (i) to study the magnitude of developmental changes in their mental abilities, viz., verbal, reasoning, numerical, perceptual and mechanical and their stabilization in the adolescence period of higher secondary school pupils; (ii) to study the pattern of abilities and its

* As far as it is known to these authors, the following agencies have produced such monographs and pamphlets :

1. The Central Bureau of Educational and Vocational Guidance, New Delhi;
2. The Central Institute of Education, New Delhi;
3. The National Council of Educational Research and Training, New Delhi;
4. The Faculty of Education and Psychology, The M.S. University of Baroda, Baroda;
5. The Institute of Vocational Guidance, Bombay;
6. The State Bureau of Educational and Vocational Guidance, Bangalore;
7. The State Bureau of Educational and Vocational Guidance, Cuttack;
8. The Bureau of Psychology, Allahabad;
9. The Prantiya Shikshana Mahavidyalaya and the College of Educational Psychology and Vocational Guidance, Jabalpur.

Apart from these institutions, the extension services departments attached to colleges of education have also developed useful material in the area of educational guidance.

stability in respect of secondary school pupils of different levels of brightness; (iii) to see whether abilities stabilise during the adolescence period, and to find out at what age the plateau emerges in the growth curve of an ability; (iv) to find out whether the rates of growth of different abilities for different levels of brightness are different; (v) to see whether the abilities are differentiated during the period of adolescence; (vi) to see whether there is psychological evidence to justify the belief that children in delta class (13+) could be sorted according to their abilities into four or five special types, each suited to one stream or the other of secondary education; (vii) to see if the child belongs to one type at 13+ and whether he continues to remain in the same in the later years; and (viii) to see whether strengths and weaknesses in abilities are relatively permanent. Johri (1960) studied the influence of physical education on postadolescent girls. The aim of this investigation was to study the personality development of postadolescent girls and to assess the impact of participation in games and such other co-curricular activities on their total personality make-up. Panse (1960) studied the effect of supplementary diet on the physique of school children. The aim of this study was to explore the possibility of meeting the problem of malnutrition among school children and find out the effect of four supplementary diets, viz., neera, palmgur, skimmed milk and plantain on the physical development of children, the cost accepted for these supplementary diets being one anna six paise per day per pupil. Muralidharan (1961) studied the behaviour problems of pre-school and early school children. The purposes of her study were: (i) to conduct a basic general survey of behaviour disorder prevalent in the children of the pre-school and early-school age; (ii) to study the relationship between behaviour disorders and certain determinants of behaviour such as the biological, social and personal-historic factors; and (iii) to study two extreme groups of well adjusted and maladjusted children with a view to finding out the role of certain factors such as maternal attitudes, maternal adjustment, children's intelligence and ethical discrimination in the development of behaviour disorders. Dave (1958) studied the language and arithmetic abilities of the children between 8 and 13 years of age in a Bombay Gujarati school. Sohoni (1953) studied temperament and character of children with special reference to those attending high schools in cities.

Research on Interests and Vocational Choices

Bardhan (1965) studied the development of

interests among the boys of secondary schools in Calcutta with reference to the four elective courses or streams, viz., humanities, science, technology, and commerce in multilateral schools. The investigation intended to find out the interest patterns that would correspond to particular streams of study in the diversified secondary education and thereby to develop a tool for measuring interests useful in prediction and guidance. Pandey (1960) studied the interests of adolescent boys from schools in Lucknow division. The aim of this study was to investigate the interests of adolescent boys and to make appropriate suggestion for corresponding improvement in their educational programmes. More than 4,000 students of class IX and X were studied. Data were collected from more than 200 teachers also. Patel (1967) made a critical study of recreational, socio-cultural, intellectual and occupational interests of high school pupils in Gujarat. The major objectives of this study were: (i) to identify various types of interests among the school population, and (ii) to find out differences if any on account of age, sex, rural-urban origin and cultural habitat. The sample consisted of nearly 4,000 boys and girls from classes IX, X and XI of the age group 13+ to 15+. The sample was drawn from nine districts of Gujarat representing twelve different cultural strata. Singh (1967) investigated the patterns of educational and vocational interests of adolescents. The purpose of the investigation was to test the hypothesis regarding the differences in interests on account of sex, and rural-urban origin and the relationship between the educational interests, the vocational interests and the courses of study. Grewal (1971) studied the educational choices and vocational preference of secondary school children in relation to environmental variables. The major hypotheses of this study were: (i) there is no significant difference between the composite index of vocational environment as perceived by certain groups of students studying science or humanities as electives at the higher secondary stage; (ii) there is no significant difference between composite index of vocational environment as perceived by certain groups of students choosing science, agriculture, humanities, home science or commerce as elective subjects; (iii) there is no significant difference between the level of vocational preference measured in terms of occupational preference scores of certain groups of students; and (iv) there is no significant difference between vocational environment of home as perceived by certain groups. Singh (1972) studied the interest patterns of school going boys and girls to work out their educational implications. The

sample consisted of about 1,000 boys and girls from grades VII, IX and XI of secondary schools from four districts of U.P. Naik (1963) studied the reading interests and abilities of adolescents and adults. The aim of the investigation was to inquire into the general nature of reading interests and habits of people above the age of fifteen and also to study the developmental process of these interests. Manohar (1953) studied the reading interests of Marathi-speaking boys and girls at the secondary school stage. His objectives were: (i) to study the reading interests of boys and girls and (ii) to enable them to cultivate the right type of reading attitudes and habits. Thakur (1966) studied the reading interests of secondary pupils. He attempted to ascertain the patterns of interests as well as the differences on account of sex, age, economic conditions, intelligence and academic achievements. Syed (1967) inquired into the factors influencing the vocational choice of the educated. The sample consisted of about 200 doctors, engineers, lawyers and teachers from Aligarh and Agra districts. Singh (1969) made a comparative study of the meaning of occupational titles between and within two language groups in India. The subjects were drawn from Hindi and Kannada populations and a scale called 'occupational differential' was developed for use with them.

In addition to the above work, the ICSSR Survey of Research in Psychology (1972) lists over forty studies in connection with vocational choices, preferences, interests, and aspirations undertaken by a large number of workers in this field.

Research Regarding Tests

Jamuar (1961) constructed a study habits inventory and made an investigation regarding some psychological factors underlying the study habits of college students. Palsane (1963) constructed and standardised a study habits inventory and published alongwith an instructional booklet and a manual. The norms were calculated for senior high school students and all levels of college students. Maniar (1961) constructed and standardised tests of mathematical and language abilities for Gujarati speaking children between the age group 13 to 17 in the Greater Bombay region. Desai (1954), Nafde (1961), Phatak (1963) and Mallin (1964) worked on construction and standardisation of intelligence tests of different types—verbal, nonverbal, performance, individual or group—suitable at various age levels. Deshpande (1967) standardised a predictive battery of tests for

measuring aptitude for science courses in secondary schools. Varma (1960) standardised a predictive battery of tests for measuring differential scholastic aptitudes. Mascarenhas (1964) carried out an investigation into the suitability of students for admission to the medical colleges of Bombay University. Bureau of Psychology, Uttar Pradesh (1952) carried out a project of allocating junior high school leavers to four types of higher secondary education. The objectives of this project were: (i) to develop a battery of tests which could forecast a pupil's suitability for a particular type of higher secondary course; (ii) to fix the "cutting point" for admission to such courses; (iii) to explore the possibilities of extending the guidance programme for allocation of pupils, in other schools. Subsequently, therefore, the Bureau developed a group of guidance projects (1958) to organise the programme of allocating junior high school leavers to the different streams of higher secondary education. The project covered 535 pupils from class VIII in five high schools of Allahabad. Palsane (1965) made a predictive study of the secondary school certificate examination marks. The predictor variables in this study were: (i) the total marks obtained at the S.S.C. examination; (ii) the total marks in languages; and (iii) marks in subjects such as mathematics, science or social studies according to their relevance for particular university courses like arts, science, commerce, engineering, etc. The criterion variables were of the parallel nature as the predictor variables. The sample consisted of all students who entered the particular university in 1957 (one sample) and all those who took their degree examination in 1963 (second sample). The first sample was followed up and the second sample was followed back. Palsane (1965) standardised a personality inventory for measuring the factors of introversion, extraversion and neuroticism. He employed the forced-choice technique in the construction and standardisation of the inventory. The test is meant for college students. Sharma (1970) employed the sociometric technique in school and made different investigations with it. In one of the studies he investigated the relationship between intelligence, achievement, personality adjustment, interest patterns, life at home and at school and the popularity and isolation of secondary school pupils. In the second study he inquired into the relationship between social skills and activities and sociometric status. The third study was about sociometric status and personality characteristics. The fourth study was about the sociometric seating arrangement and its effect on classroom social relations. The fifth study aimed at investigating

the effect of sharing responsibilities on developing an atmosphere conducive to group living. The sixth investigation aimed at determining the effect of study and discussion of biographies of some great men of India as well as biographical sketches of class fellows in restructuring interpersonal relations within class. The author has thus demonstrated a wide and versatile use of sociometry as a tool for the classroom teacher. Dhondiyal (1964) studied art as a projective technique for deviant children. The objectives of this study were: (i) to assess the potentiality of art as a projective technique; (ii) to bring to light the bearing modern concepts of personality, normality and abnormality have on art; (iii) to examine the theory of child art in the light of contemporary views of cognitive, motor and emotional processes and to suggest modifications, if necessary; (iv) to formulate fundamental principles of the interpretation of art on the basis of the modern theory of dynamic psychology; and (v) to evolve and validate an objective and scientific technique for the interpretation of art. Palsane and Pathak (1971) made a normative study of educational achievements across a period of ten years. Twentyfour standardised achievement tests covering eight subjects in each of the three grades, viz., VIII, IX and X were administered to a sample of about 2,000 pupils all over Gujarat State. The study revealed significantly changing norms and standards. Palsane (1972) investigated group differences in educational achievement on account of sex and rural-urban schooling to bring out the importance of having special group norms or local norms while using standardised, educational and psychological tests. Based on these significant group differences, therefore, he has developed tables of norms for the rural-urban boys and girls separately. For a detailed review of research in the area of psychological tests and also in the area of achievement tests and examinations the readers are requested to refer to the relevant chapter in this volume.

Research on Exceptional Children

Advani (1965) studied the educational and psychological problems of the blind in the age group 7 to 21 years. This was a questionnaire study addressed to 580 children studying in schools for the blind in Maharashtra, Uttar Pradesh, Gujarat and Delhi and to their parents, to study their problems, attitudes, etc. Shah (1969) made a study of the superior children in the state of Gujarat. The aim of this study was to survey socio-economic conditions, occupational interests and anthro-

pometric characteristics of superior children in Gujarat. Deo (1969) worked on developing better procedures for the identification of the gifted and studied their characteristics as against normal groups. Comparisons of the gifted and the non-gifted were made with respect to their self-concepts, adjustment in various areas, certain personality characteristics, socio-economic and home background, etc. Bhatt (1966) made a study of gifted children in order to develop simple and inexpensive procedures for their identification and to study their personality traits. In order to determine the mental subnormality among the school-going children and to create an awareness regarding the need for an effective action programme, St. Xavier's Institute, Bombay conducted a survey of the mentally subnormal children in Greater Bombay (1969). The sample was drawn from clinics, hospitals, doctors' records schools for subnormals and private sources as well as from the ordinary schools. Bhatt and Advani (1965) studied conformity and deviation among adolescents. The investigation aimed at studying the extent of conformity and deviation among the adolescents and their acceptance of the cultural values by measuring their attitudes towards some important values of Indian culture. Mehta (1969) made a psychological study of the problem children in order to identify their emotional, social and scholastic difficulties. Bhalla (1970) made a comparative study of the self-concepts of disciplined and undisciplined students. The major objectives of this study were: (i) to construct and standardise a test for identifying disciplined and undisciplined students, and (ii) to compare the two groups with respect to their self-concept.

Some Descriptive and Correlational Studies

Mathur (1966) made a comparative study of intelligence among the professional groups. The aim of this study was to prepare an intelligence scale and establish norms for use at the time of entrance to the different courses of studies, viz., engineering, medicine, law and teaching. Dutt (1966) studied the psychological and educational implications of the concept of mental health in Indian thought. The purpose was to study the relationship between other worldliness, self surrender and mental health. The attitudes were studied in relation to anxiety. Rao (1965) made a diagnostic study of reading difficulties of students in high schools by comparing the poor readers with the

superior readers. Palsane (1969) made a study of some problems and perceptions of college students. He covered the following areas in his inquiry: (i) students' needs and facilities, (ii) students' problems, (iii) agitations by students, (iv) academic standards and (v) socio-political life of the country. Mulay (1971) studied the needs and problems of adolescence. His objectives were to study (i) the distribution of high school population in respect of their socio-economic status; (ii) the problems of rural and urban students and their variations according to high, average or low socio-economic status; (iii) the attitudes and study habits of these different categories of school students; (iv) the differences among different groups in motivation for achievement; (v) the needs of different types of students; and (vi) the value systems that different school children bring with them. Palsane (1970) studied problems of the university students in the following areas: (i) educational, (ii) family, (iii) health, (iv) socio-economic, (v) personal-emotional, (vi) vocational and (vii) miscellaneous. The sample consisted of more than 900 college students. Palsane (1970) studied the personal adjustment of the students in relation to their health and education of their parents. The aim of this study was to test the hypothesis of positive relationship between personal health and parental education on the one hand and adjustment on the other. Chaudhary (1971) studied the relationships among achievement motivation, anxiety, intelligence, sex, social class and vocational aspirations. The hypotheses of this study were: (i) achievement motivation and intelligence would be significantly and positively related; (ii) achievement motivation and test anxiety would be negatively correlated; (iii) students from middle class would have higher achievement motivation than those from higher and lower social classes; (iv) boys would have higher achievement motivation than girls; and (v) students with high achievement and low test anxiety would have realistic vocational aspirations. Nijhawan, Verma and Kalra (1968) made an inquiry into the determinants of anxiety in school children. It was hypothesised that: (i) anxiety would increase with age; (ii) girls would be more anxious than boys; (iii) urban children would be higher on anxiety because of parental pressure on achievement; (iv) the children from private schools would report more anxiety than the children from government schools; and (v) lower class children would be less anxious than upper class children. Kundu (1970) studied the effect of distraction through music on the reading efficiency. Varma (1960) undertook to study rural-urban differences with respect to mental ability

in the region of eastern U.P. The main aims of this study were: (i) to compare the levels of mental ability in urban and rural schools and (ii) to identify the type of ability in respect of which differences were significant and to investigate the causes for the differences. Vanarase (1970) studied the relationship of scholastic underachievement to a large number of intellectual, affective, socio-economic and personal factors. He compared the matched groups of underachievers and normal achievers on twentyfive different variables.

In the area of correlational studies, educational achievement and the different factors affecting it have received wide attention from the research workers. This is obvious from the list of over forty studies given in the ICSSR Survey (1972). Adjustment problems have also received wide attention of the research workers and all available literature on guidance and counselling includes many references to this aspect. Other descriptive, correlational and predictive studies refer to motivation, especially achievement motivation, self-concept, aptitude and abilities, various personality characteristics, study habits, socio-economic and sociometric status as they are seen in various groups of children and adolescents, singly or in combination with other factors. A detailed review of research regarding correlates of achievement is given elsewhere in this volume.

THEORETICAL PROBLEMS IN THE AREA OF GUIDANCE

The literature in this area is published mostly through the Journal of Vocational and Educational Guidance. A few books and pamphlets are also published which are relevant specifically to the Indian situation. This literature must have helped in the development of guidance movement in India by making a periodical survey of this service and bringing to the notice of the educationists and administrators, its importance and priority.

RESEARCH GAPS AND PRIORITIES

The report given above indicates certain salient features regarding the development of guidance movement in India. There is a great deal of duplication of work in certain areas while some other areas are grossly neglected, e.g., work has been done mostly with high school and college students and not so much with the primary school

children, may be because it is easy to collect data from the former. In the field of testing, most of the work pertains to group tests and not individual tests which are highly essential if the guidance is to be meaningful to an individual. This may again be due to the matter of ease and convenience. Interest measurement has significantly lagged behind, in spite of its apparent simplicity and importance. Diagnostic testing is, again, an important but neglected area of testing. Apparently, there is almost no reference to diagnostic tests and none whatsoever to diagnostic reading tests which is a highly important area of educational guidance at the stage of early

school education. This is because the standardised educational and psychological tests are the chief techniques in making this service possible. The tests of all kinds have to be standardised in the regional languages for use at all different age levels. For this, it may be necessary to mobilise the facilities of post-graduate research and teaching departments and the students working for degrees be made to work for a couple of years simply on the task of instrumentation. In the absence of valid and reliable tools and techniques, research and guidance have absolutely no meaning. Only a systematic planning and drastic drive can help to improve the situation.

ABSTRACTS : 187-228

187. *ADVANI, K. R., Problems—Educational and Psychological—of the Blind Children in the Age-group 7 to 21 years, Ph.D. Edu., Bom. U., 1965.*

The main objective of this study was to pave the way for further research and progress in the field by presenting a clear picture of the functioning of the schools for the blind and many other related aspects.

Five hundred and eighty children studying in schools for the blind in Maharashtra, Gujarat, Uttar Pradesh and Delhi were interviewed. A questionnaire was sent to 500 parents of blind children in order to ascertain their attitudes towards visually handicapped children. A questionnaire was administered to 140 blind children to ascertain their attitudes towards parents and siblings. Another questionnaire was developed for the heads of institutions. Institutions situated in Madras, Rajasthan, Gujarat, Maharashtra, Punjab, Uttar Pradesh and Delhi were selected for visits. Twentyfive homes were selected for visits so as to observe the children's adjustment in the family. The William's Intelligence Test for the blind was administered to blind children of the age group fourteen and above. The Scholastic Aptitude Test for Indian sighted children was administered to 124 blind children.

The study revealed that though there were over 8,00,000 blind children in the school going age, there were only hundred schools for them. Only ten percent were congenitally blind. The majority of blind children were from very poor families with little or no educational background. More than thirty percent children had illiterate parents. Only 27.31 percent of the children, who left school, were able to earn their livelihood. Seventyfive percent of the schools depended on donations, and only some of them were assisted by grants from central or state governments. The main educational problem was the shortage of textbooks, and those that existed were haphazardly transcribed. The curriculum was not well planned and the teachers were unqualified and poorly paid. The schools paid little or no attention to pupils' vocational and social training. Results of the intelligence test revealed that majority of children were slightly below normal. Nearly 38.9 percent of the schools were upto the primary level; 48.9 percent of the schools upto middle school and only 12.2 percent upto high school level. About 66.35 percent of the children were worri-

ed about their future. The bulk of the children studied, had poorer health than normal children. About 45.6 percent of the schools felt that parents did not have much affection for their children. About 44.5 percent of the schools believed that blind children were more prone to sexual vices which might be due to their introversion.

188. *BARDHAN, A. K., Development of Interests of Boys of Secondary Schools in Calcutta, West Bengal, with reference to four different streams, namely, Humanities, Science, Technology and Commerce in Multilateral Schools, Ph.D. Edu., Cal. U., 1965.*

The investigation was intended to find out some interest patterns that would correspond to particular streams of study in the diversified secondary schools in India, and thereby to develop a tool for measuring interests for predictive guidance in education.

A tool to measure the development of interests of boys of secondary schools in Calcutta was designed on the basis of Strong's interest measurement technique, with some modifications. To construct suitable items within the vocabulary range and interest patterns of the pupils, interest diaries were collected on a ten item questionnaire. As much as 150 such interest diaries were collected from the same group at intervals of one month. The first trial form of the interest inventory in Bengali consisted of 242 items, selected and translated from the SVIB (Form M) and the interest diaries consisting of four sections. These items were tried on 100 boys of class VIII. In the final form, only 190 items remained. Interests of 100 boys in each grade from VIII to XI and the first year degree class were compared at regular intervals to determine the prognostic value of the inventory. A plus weightage was given to responses preferred by criterion group and a minus weightage to items marked by non-criterion group, the size of the weightage being determined by the degree to which the scores differed. The achievement in the higher secondary examination was taken as the criterion of success. The criterion group consisted of 200 students in the three year degree course. Items were designed in L.I.D. format. The reliability was determined by the Kuder-Richardson method and the test-retest technique.

The most important outcome, according to the investigator, was the reestablishment of the fact that interest measurement was an effective way of educa-

tional guidance in the younger boys' group. The study clearly proved that a good amount of prediction of success could be made on the basis of interest measurement of school boys of class VIII. The point biserial correlation coefficient between the interests of class VIII boys and their higher secondary examination results was found to be 0.657. The study revealed that the boys' interests were remarkably stable from class VIII onwards. The changes that were determined could be interpreted as favourable crystallisation of interests to fit in the desired area of activity and study. Retest results indicated that in spite of slight change in interest ratings and gradual decrease in likes, a large number of primary interests underwent very little change.

189. BHALLA, S. K., *A Comparative Study of the Self-Concepts of Disciplined and Indisciplined Students*, Ph.D. Psy., Pan. U., 1970.

The major objectives of the study were: (i) to construct and standardise a test for identifying disciplined and undisciplined students; and (ii) to compare the two groups with respect to the patterns of self-concept they hold as well as to find the nature and extent of their difference in this aspect.

The sample for the study included 250 college students of the age group seventeen to twentytwo drawn from certain colleges randomly selected from three states and two union territories. The D-I Inventory was the major tool for the study. This was prepared by selecting twentyfive pairs of fifty negative and positive statements. The preliminary form was judged by thirty college principals and tried out on a sample of 750 college students for the pilot study. For item validation, discriminating indices for each item were found by teachers' ratings on a four-point scale. Test-retest reliability was calculated with a time lag of fortyfive days. On using point biserial correlation, thirtyfive items out of the fifty items yielded statistically significant relationship. A cutting score of +8 was considered to be valid enough for identifying disciplined and undisciplined students. On the basis of their scores on the D-I Inventory, 400 students were identified as undisciplined, 300 as disciplined and 150 as doubtful cases (scores ranging between -7 to +7). Besides this D-I Inventory, the Adjective Check List and the Deo's Personality Word List were used to find out the self-concept of the two groups. Obtained frequency distributions were studied for their central tendencies, dispersion, skewness and kurtosis. CR test was also applied.

Findings on self-concepts of the groups revealed that: (i) the undisciplined groups describe themselves through greater number of adjectives—perceiving themselves as graceful, likeable, amiable, energetic, forceful, etc., whereas the other groups perceive themselves to be shy, introvert, socially withdrawn, wise, patient, well-adjusted and relaxed; (ii) both the groups consider themselves to be kind, cooperative, friendly, self-controlled, etc; (iii) both the groups differ significantly on emotional adjustment and social adjustment, although students from both the groups display a fair amount of emotional adjustment and social adjustment, undisciplined students having a clear edge over their counterparts; (iv) the mean score on self-concept of undisciplined students is lower than that of the disciplined students; (v) undisciplined students rate themselves high on intelligence dimension and aesthetic dimension, but the disciplined students abstain from enduring themselves with adjectives on these dimensions; (vi) both the groups display sound and enduring character and their self-concept reveal many desirable character traits; (vii) disciplined students score much higher on composite self-concept measure as compared to their counterparts, where higher score indicates high self-regard and lower score does not necessarily indicate a low self-regard.

190. BHATT, C., *A Study of Gifted Children*, A.G. Teachers College, Ahmedabad, 1966. (NCERT

financed)

Major objectives of this study were: (i) to develop 'simple and inexpensive' procedures for identifying the gifted children (children with superior intellectual ability and high academic achievement based on teachers' observation and academic record) and (ii) to study the personality traits of gifted children.

A sample of 180 pupils—106 on the basis of IQ scores, fortyfive on the basis of achievement record and twentynine on the basis of teachers' ratings—was selected for the study. A list of traits was developed, which included especially those traits which were normally found among the intellectually gifted. Out of fifty-nine traits, thirty-nine traits were selected on the basis of a tryout for inclusion in the final list. The list was validated against the traits actually possessed by a known group of intellectually gifted children selected on the basis of IQ scores alone. The reliability of the trait list was obtained by the test-retest method. The validity was obtained by rating the nongifted on the list and comparing their

scores with those of the gifted. Cross validation studies were conducted in four schools. A check on this 'short cut' method was made by administering the list to a school population of 957 pupils spread over twentyfive classes in four different schools, situated at four different places in the semiurban and rural areas. The method was found to work satisfactorily.

At the second stage of the work, personality traits of twenty gifted and twenty nongifted children were studied by interview technique.

The gifted were found to be distinctly superior to the nongifted in intellectual pursuits, regularity in studies, leadership qualities, originality, understanding, self-confidence, politeness and in choice of companions.

191. BHATT, L. J., and ADVANI, K. R., *Conformity and Deviation among Adolescents—A Socio-Psychological Study*, Dept. of Psy., MSU, 1965. (NCERT financed)

The objectives were (i) to study conformity and deviation among the adolescents from a socio-psychological view point and (ii) to study whether the adolescents (Gujarat) accept or reject the cultural values, by measuring their attitudes towards some important values of Indian culture.

A Likert type scale to measure attitudes, consisting of eight sections related to adolescents' life; adolescents' behaviour towards teachers, towards parents, moral values, social values, civic values, religion, boy girl relationship, and education, was administered to parents and teachers in a pilot study. The final form, after item analysis, contained fourteen items in each section. The scale was administered to 1000 adolescents (600 boys and 400 girls) of class X belonging to seventeen schools in Baroda, one in Broach, two in Ahmedabad and three in Bombay. The t test was employed to find out significant difference in mean scores on different sections. The responses of boys and girls on fifty items of the scale were also compared by employing chi-square test. Fifteen deviant boys were interviewed in the beginning. As a follow-up, 100 adolescents were interviewed, out of which thirtyfive girls and fifteen boys were of the Certified School and the rest were boys from other schools of Baroda.

The findings of the investigation were: (i) both boys and girls were found to have favourable attitude towards the various norms and values studied; (ii) in all the sections, excepting the one for religion, girls had higher mean scores than boys; (iii) analysis of responses on fifty items showed that a majority

of boys and girls agreed with items expressing favourable opinions and disagreed with items expressing unfavourable opinions; (iv) in the case of items for which the difference between the responses of boys and girls was significant, it was found that the percentage of girls agreeing with favourable opinions was higher than that of boys; (v) in the case of the deviants, adolescent boys had favourable attitudes towards teachers and parents and unfavourable attitudes towards social and civic values; (vi) the deviants had lower mean scores than the normal boys on all the sections, the differences being significant in all the sections excepting the one for boy-girl relationship; (vii) majority of the normal boys disagreed with the unfavourable opinions, but the deviant boys were divided in their opinion, though the number disagreeing with them was more than the number agreeing; and (viii) both boys and girls, in general, accepted the norms and values.

192. BUREAU OF PSYCHOLOGY, *The Allocation of Junior High School Leavers to four types of Higher Secondary Education*, Allahabad, 1952.

The three main objectives of the project were: (i) to find out, by experimental methods, a battery of tests which would forecast the type of higher secondary course for which a pupil was best fitted; (ii) to determine and fix the point (pass mark) at which number of 'misfits' is minimum. 'Misfits' are those pupils who just 'pass' but do not achieve success in the higher secondary course as well as those pupils who fail to get admission, but if admitted to a higher secondary course would achieve success; and (iii) to explore the possibilities of extending the benefits of similar educational guidance programmes to other schools and students.

The sample consisted of 161 class VIII students of the Government Intermediate College, Allahabad. The required information was obtained by a three sided approach. The information regarding parents' choice of the types of courses for their wards (in order of preference) was obtained through a circular letter. The parents were acquainted with the educational opportunities which were open to their wards and were advised to base their choice on a careful consideration of their wards' intelligence and abilities, aptitudes and interests, scholastic attainments, personality qualities and their own capacity to finance the future education and training of their wards. In addition to it, parents were required to indicate the main and subsidiary

subjects to be chosen by their wards as well as four professions to be chosen by their wards on completing education. Teachers' estimates of the students' abilities and attainments, health and social conditions, aptitudes and interests, temperament and other personality qualities were obtained on a sociological schedule, specially designed for this project. In addition to it, intelligence, aptitude and personality make-up tests were administered to each student. On the basis of information gathered from these three sources, recommendations were made in May 1951 to the principal, Govt. Intermediate College, Allahabad, regarding the most suitable allocation of each child to one of the four types of higher secondary education, viz., Literary (group A), Scientific (group B), Constructive (group C), and Aesthetic (group D). The following tests were used for the allocation: (i) The Hindi Adaptation of the New Revised Stanford-Binet Test of Intelligence, Scale L, 1937 Revision; (ii) Adaptation of the Koh's Block Design Test; (iii) Adaptation of the Alexander's Passalong Test; (iv) The Group Test No. 70,23, N.I.I.P., London; (v) The Detroit Manual Ability Test; (vi) The Hand-steadiness Test; and (vii) An adaptation of the Thematic Apperception Test. The criteria for allocation were as follows: (i) Regarding the level of intelligence, the student must have an IQ of 95 for group A, 100 for B, 90 for C and 85 for D. These IQs are for tests with a mean of 100 and standard deviation of 15. (ii) Regarding types of ability, students with comparative excellence in vocabulary score were allotted to group A, with all round excellence on the Alexanders' Passalong Test, the Group Test No. 70,23 and V score to group B and those with comparative excellence on Passalong Test only, to group C. (iii) Regarding special aptitudes, those pupils, who, according to the teachers' judgement, showed marked aptitude for music and art, were allocated to group D, those with literary aptitude to group A and those showing excellence on Mechanical Aptitude Tests to group B or C. (iv) As regards attainment, the criterion was average standard in the main subjects of the group to which they were allocated. The sample profiles were also drawn.

The important findings were as follows: (i) Out of 161 students, thirtyfive left the college, hence 126 students were taken for the follow-up. Out of these, the Bureau recommended twentyseven for group A, seventythree for B, twentyfour for C and two for D. Out of the twentyseven students recommended for group A, the principal allocated only eight to group A. From the remaining nineteen, he upgraded seven to B and twelve to C. Out of the seventythree students recommended for group B, the principal

agreed in the case of fiftyone; out of the remaining twentytwo, he placed seven in A and fifteen in C. From amongst the twentyfour cases recommended for group C, the principal accepted fourteen; out of the remaining ten, he placed five in A, three in B and two in D. Out of the two cases recommended for group D, he placed one in B and the other in C. In all, there was perfect agreement in seventythree cases thereby giving the coefficient of contingency as 0.485 which was highly significant. (ii) A change in parents' wishes was noted in thirtytwo cases out of fiftythree. (iii) The coefficient of contingency between classmasters' recommendations and the Bureau's recommendations was 0.647, whereas it was 0.782 in the case of parents' wishes.

193. *BUREAU OF PSYCHOLOGY, A Group Guidance Project, Allahabad, 1958.*

This project was a sequel to the Bureau's earlier project, viz., "The Allocation of Junior High School leavers to Four Types of Higher Secondary Education", undertaken in 1952, and in which the testing was done on an individual basis. The purpose of the present project was to provide a method of testing on group basis in view of the need of a large number of students for obtaining educational guidance. The objective was to advise the pupils in the choice of proper courses and subjects of study to be taken up by them in class IX and to assist the headmasters in allocating them to proper groups of courses, viz., Literary (A), Scientific (B), Constructive (C) and Aesthetic (D).

The sample consisted of 535 class VIII students from five schools in Allahabad, (1951-52). The required information about these students was obtained from parents, teachers and from the results of the psychological tests administered to these students. The parents were requested to express in order of preference, four types of courses desired for their wards and also four professions or vocations which they would like their wards to select in future. The teachers were required to supply detailed information about each student, on a sociological schedule prepared by the Bureau, to recommend the type of course along with the subjects to be chosen and to express opinion regarding the professions or vocations in which the student was likely to perform well. In order to enable the teachers to judge the students objectively, the teachers' seminars were organised. The psychological testing was done on group basis. The following tests were used: (i) The Sohan Lal's

Intelligence Test for 11+, The Bureau's Intelligence Tests for 13+ and 14+; (ii) The Hindi Attainment Test B.P.A.T. 2; (iii) The Form Relations Group Test, N.I.I.P. London; and (iv) The Group Test 70|23, N.I.I.P. London. The criteria used for allocation were as follows: (i) Regarding intelligence, it was IQ 100 for B, 95 for A, 90 for C and 85 for D. (ii) Marked special aptitude for music and art, literary aptitudes and marked excellence in mechanical aptitude were the criteria for the allocation to group D, A, and B or C respectively. (iii) Regarding attainment, the students were required to attain at least average standard in the main subjects of the group to which they were allocated. Personality qualities and parents' wishes regarding the choice of subjects and courses were also taken into consideration for allocation.

The important findings were as follows: (i) The actual number of cases were 279. Out of these students, the Bureau recommended fifty-nine for group A, ninety-eight for B, 118 for C and four for D. The principal's allocations were eighty-eight for A, 117 for B, seventy-four for C and none for D. Out of the fifty-nine students recommended for group A, the principal allocated only thirty-three to A. Out of the remaining twenty-six, seventeen were allocated to B and nine to C. Out of the Bureau's recommendation of ninety-eight students for group B, the principal admitted only seventy-two; out of the remaining twenty-six, fifteen were allocated to group A and eleven to C. Out of the 118 students recommended for C, only fifty-four were allocated to C; out of the remaining sixty-four, thirty-eight were placed in A and twenty-six in B. Lastly, out of the four recommended for group D, none was allocated to it; two were placed in group A and two in B. There was perfect agreement between the Bureau's recommendations and the principal's allocation in 159 cases out of 279. The coefficient of contingency was .48. (ii) There was greater agreement between the classmasters' recommendations and the Bureau's recommendations. The coefficient of contingency was .54 which was highly significant. (iii) The coefficient of contingency was .63 for the agreement between the parents' wishes and the Bureau's recommendations. (iv) In addition, the coefficient of contingency was worked out for the agreement between the Bureau's recommendations and the students' choices. It was .58. As regards the percentage of students' choices, forty percent wished to join group B; thirty-six percent to group A; twenty-one percent to group C and three percent to group D. (v) The percentage of parents' and students' choice was more for group B (i.e. Science).

194. DEO, P., *Identification of Gifted Adolescents and a Study of their Characteristics*, Dept. of Edu., Pan. U., 1969. (NCERT financed)

The study aimed at (i) developing a better procedure for identifying the gifted and nongifted groups by using verbal and nonverbal tests and (ii) comparing the two groups on certain characteristics.

Two hundred adolescents in the age group fourteen to eighteen were selected from different schools and colleges in and around Chandigarh, after administering the intelligence test. Out of these, 100 were gifted and 100 average with an equal number of boys and girls. Differences between groups were studied by the self-concept inventory standardised by the Education Department, Punjab University. The Bernreuter's Personality Inventory, the Bell's Adjustment Inventory and questionnaires for home and school background, prepared by the department were also used. Students above 85th percentile in verbal tests and those above 95th percentile in non-verbal tests were selected as gifted children. The average group was selected from the adolescents falling between 40th and 60th percentiles on both the tests. The t ratios were calculated for finding the significance of differences between means. For the Bernreuter and the Bell scores, the chi-square test was employed to test the independence of frequencies with the factor of giftedness. Significance of difference in percentages was found out by computing t ratios for frequencies in home background. The response to questionnaires on school background was very poor, hence the data could not be used.

Analysis revealed that (i) the gifted boys were more self-accepting and the average were more self-rejecting; (ii) the gifted girls showed a lower positive self-concept and higher negative self-concept as compared to the average girls who were more self-accepting; the difference might be due to the differential treatment given to the gifted at home and in society; (iii) the gifted boys scored higher on self-concept, and on self-concept about social adjustment, emotional adjustment, intelligence and character than the average boys; (iv) the gifted girls were more self-rejecting than the average girls; (v) on the personality inventory, gifted boys scored higher on extraversion, dominance, self-confidence and sociability than the average boys but differences on the dimension of self-sufficiency were not significant; (vi) the gifted girls were almost equal on neurotic tendency, extraversion-introversion, dominance-submission and self-confidence, but higher on intellectual independence and lower on sociability scale than the average girls; (vii) the Bell's Adjustment Inventory scores in-

licated that gifted boys were better adjusted than the average boys, but for the two groups of girls there were no differences; (viii) the Home-Information Blanks showed that, on the whole, the gifted were superior in physical health but more nervous and worrying; (ix) the gifted came from parents higher in profession, income, education and other activities; (x) gifted adolescents were higher in birth order, showed better educational development, had played more games, preferred intellectual work and had better educational facilities at home; and (xi) parents of gifted children showed higher professional aspirations for their children.

195. *DHONDIYAL, S., Art as a Projective Technique for Deviant Children, Ph.D. Edu., Raj. U., 1964.*

The objectives of the study were: (i) to assess the potentiality of art as a projective technique; (ii) to bring to light the bearing that modern concepts of personality, normality and abnormality have on art; (iii) to examine the theory of child art in the light of contemporary views of cognitive, motor and emotional processes and to suggest modifications, if necessary; (iv) to formulate fundamental principles of the interpretation of art on the basis of the modern theory of dynamic psychology; (v) to validate the technique of the interpretation evolved; and (vi) to evolve an objective and scientific technique of the interpretation of art.

The sample consisted of spontaneous drawings and paintings of deviant children between 7+ and 11+ and also of a class of fortyfour normal children of the same age group. The tools used were interviews, observations, clinical records of deviant children, tests and psychologists' reports.

The study revealed that: (i) the house was most prominent in the minds of the normal children and least prominent in the minds of the abnormal children; (ii) milieu affected the contents of the art products of all the children; (iii) boys drew mostly male figures, while girls drew female figures; (iv) with an increase in IQ there was more refinement and mastery of lines; (v) the mentally blocked could not scribble; even when they drew uneven loops, red was most used or preferred colour for them; (vi) the children of higher IQ used a variety of colours; (vii) there was no characteristic order of preference either of the mentally retarded or of the gifted children and emotional significance of a colour was relative; (viii) in evolving an interpretative form to score and interpret an art product, variables located

were: identified figures, conception of the identified figures, world view, emotional climate, orientation to the environment as exhibited by the position of the identified figures, intelligence, integration of ego, manifest super ego, reaction to art, and symbolisation.

196. *DUTT, N. K., Psychological and Educational Implications of the Concept of Mental Health in Indian Thought (an empirical study of the relation of Attitudes with Anxiety), Ph.D. Edu., Pan. U., 1966.*

The purpose was to study the relationship between other worldliness, self surrender and mental health, and the psychological and educational implications of the same.

An attitude scale to measure attitudes towards other worldliness and self surrender, and a personality inventory to measure anxiety were constructed and standardised. The item analysis of the attitude scale was carried out by Thurstone technique as well as by Likert technique, whereas the item analysis of the personality inventory was done by U-L method and point biserial correlation. The reliability coefficients for the attitude scale and the personality inventory were worked out by K-R Formula 21, the Tucker and odd-even methods. In addition to these, Dressel's method of finding reliability was employed in the case of the personality inventory. Content validity, construct validity and congruent validity coefficients were established for the attitude scale as well as for the personality inventory. The indirect sources of validity were found out by employing statistics like index of reliability (Guilford's), correlational indices of item validity and cross validation of regression weights. These indirect sources indicated the internal consistency of the tests.

The findings support the hypothesis, viz., "Anxious people adopt attitudes towards other worldliness and self surrender corresponding in strength to the level of anxiety they have." The substantial and marked correlation only speaks of the mutual association between the two variables, viz., anxiety scores and attitude scores. It is only on theoretical basis that we can prove anxiety to be the cause of such attitudes, although correlation does not speak of causation. Later on, such escapist attitudes and anxiety come to stay in a circular fashion, each feeding back the other. Such escapist attitudes are commonly observed in Indian population and are also socially approved; majority picks up such attitudes to meet anxiety superficially and tem-

porarily rather than adopting them constructively. These cannot resolve anxiety successfully. Only very few people with strong attitudes have less anxiety. There has emerged a certain secondary finding too, that women are found to be more anxious and seem to have stronger attitudes towards other worldliness and self surrender than men.

197. *GANGULY, A.K., An Experimental Study of the Intellectual Factors in the Students of the Pre-School Leaving Class under different systems of Secondary Education, Ph.D. Psy., AMU, 1965.*

The present investigation aimed at verifying the claims that : (i) the quality of schooling makes a difference in intelligence test scores between 'best' and 'worst' schools; and (ii) the mental flexibility and capacity to form new concepts are affected by adolescents' intellectual and emotional circumstances which deteriorate in adulthood.

The study was conducted on a sample of 180 boys, aged around thirteen to fifteen, of classes IX and X, selected sixty each from the U.P. Board High School having Hindi as the medium of instruction, the M.U. High School having Urdu as the medium of instruction with stress on English and having English as a compulsory subject and Public Schools retaining English as the medium of instruction. The design was in accordance with the Lovell's Cross-Sectional method duly modified. The tools of research were : (i) The Ray Chowdhury's Aligarh V.I.T. (1961 revision); (ii) The Vernon's Pattern-Reproduction Test and Graded Arithmetic-Mathematics Test; (iii) The Raven's Progressive Matrices Test; (iv) The Lovell's Hidden Gottschaldt Shapes; (v) The Trist - Hargreaves' Concept formation Test; and (vi) The Lovell's Concept formation Test. A battery of seventeen standardised tests (prepared by Ray Chowdhury) including especially two high powered lists of concept formation was selected and used. The reliability of all the tests in the battery was found to be above .80. The battery was subjected to factor analysis and factor loading were orthogonally rotated, 't' tests were applied.

It was found that : (i) there are two factors—K2 or Concept Formation and Verbal Numerical in educational group factor, in addition to 'g' factor; (ii) out of fiftyone critical ratio treatments, thirtytwo were significant and out of hundred and two t values fiftythree were significant; (iii) the public school system offers the best quality of schooling for stimulating the growth of intellectual factors, even

considering that the boys of these schools come from brighter and better socio-economic and intellectual home background; (iv) Muslim University (M.U.) system offers better stimulation than the U.P. Board system; (v) English as medium of instruction and stress on English besides the chosen regional language for instruction, are more useful for the boys to do better at the test originated in Britain, and (vi) in certain Aligarh V. I. T. subtests given in Hindi, Public School boys have done better than those of the U.P. Board system; it is probably because of better intellectual stimulation through the medium of English.

198. *GREWAL, J. S., A study of Educational Choices and Vocational Preferences of Secondary School Students in relation to Environmental Process Variables, Ph.D. Edu., Vik. U., 1971.*

The major hypotheses of the study were : (i) there are no significant differences between the Composite Index of Vocational Environment (IVE) as perceived by certain groups of students studying science or humanities as electives at the higher secondary stage; (ii) there are no significant differences between Composite Index of Vocational Environment (IVE) as perceived by certain groups of students choosing science, agriculture, humanities, home science and commerce as elective subjects; (iii) there are no significant differences between the levels of vocational preference measured in terms of Occupational Preference Scores (OPS) of certain groups of students and (iv) there are no significant differences between the Vocational Environment of Home (VEH) as perceived by certain groups.

The sample of 127 boys and twentysix girls from the urban schools and 126 boys and fifty girls from rural schools, all in the age group of fourteen to twentyone, was randomly drawn from the higher secondary schools of Bhopal and Indore. The tools used in the study were the Vocational Environment Scales, the Vocational Preference Inventory (VPI) adopted from Haller and Miller's Occupational Aspiration Scale, the Educational Vocational Plans Questionnaire and the Joshi's General Mental Ability Test. The Vocational Environment Scale had the validity coefficient of 0.57 and internal consistency coefficient of 0.93. The hypotheses were examined by using t test.

Some of the major findings were : (i) rural and urban students studying humanities and science differed significantly; (ii) boys differed significantly

from girls in their levels of vocational preference; (iii) significant relationships were found to exist between vocational environments of home, community and level of vocational preferences; (iv) home environment was more favourably perceived in comparison to that of the school and community; and (v) no clearcut rural-urban pattern of occupational choices was evident.

199. JAMUAR, K. K., *Investigation of some Psychological Factors underlying the Study Habits of College Students, Ph.D. Edu., Pat. U., 1961.*

The objective was to find out some psychological factors related to the study habits of college students.

The sample consisted of college students in Patna. A study habit inventory, constructed by the investigator was used to collect necessary data.

The findings have suggested that : (i) study habits are positively related to academic achievement but are not dependent on scholastic aptitude; (ii) though study habits are not related to extraversion-introversion, they are related to the general personality adjustment as well as home, health, social and emotional adjustment; (iii) study habits have a positive relationship with background factors like position in the family, father's occupation, hobbies, future educational and vocational plans of the students and an inverse relationship with factors, such as age, membership of organisation outside college and sharing household duties; on the other hand, study habits are not related to students' interest or participation in games and sports, interest in reading, music, membership in college societies, sources of recreation, doing some jobs along with studies, failures and rewards in school, hours of study at home and liking for college; (iv) some environmental factors are related to study habits; lighting has positive relationship but noise and ventilation have negative relationship; (v) the scholastic achievement is related to intelligence, general personality adjustment, home, social, emotional adjustments and introversion, significantly in the expected direction.

200. JOHRI, P., *Influence of Physical Education on the Post Adolescent Girls—A Psychological study, Ph.D. Psy., All. U., 1960.*

The purpose of the investigation was to study the personality development of postadolescent girls and to assess the impact of participation in games and

the cocurricular activities on the total personality makeup.

The sample consisted of 150 girls divided into two equal groups—controlled and experimental. The Bhatia's Intelligence Test was used to match the two groups. An information blank was used to collect detailed information. The Rorschach Ink Blot Test and the Thematic Apperception Test were used to study personality. Individual interviews were also held. The tests were administered individually. Group analysis was done after individual analysis. Both the groups were compared.

The findings revealed that an average girl of the experimental group was better adjusted socially, emotionally and personally than an average girl of the controlled group and she was optimistic towards the difficult problems of life.

201. KUNDU, C. L., *The Influence of Music Distraction upon Reading Efficiency, Dept. of Edu., Kur. U., 1970. (UGC financed)*

The aim of the study was to measure the difference in reading efficiency that would manifest itself when students were asked to study a selected assignment in the classroom, with and without phonographic music.

The sample was drawn from the students of the College of Education, Kurukshetra University. The controlled group technique was used. The groups were given a study assignment of a five page chapter on emotions, abstracted from psychology textbooks. The experimental group worked in distracting conditions of music, whereas the controlled group read in a quiet atmosphere. Forty minutes were given for studying the assignment. At the end of the study period, a multiple choice test of twenty minutes duration was administered to both the groups. The difference of mean scores of two groups was tested for significance.

The study revealed that auditory distraction had an adverse effect upon reading comprehension. The analysis further showed that because of individual differences, the effect of auditory distraction was moderate on a few students, relatively large on others and nil on some.

202. MANOHAR, P. M., *Reading Interests of Marathi speaking Boys and Girls at the Secondary School stage, Ph.D. Edu., Bom. U., 1953.*

The objectives were : (i) to study the reading interests of boys and girls in India and (ii) to enable

them to cultivate the right type of reading attitudes and habits.

The study was limited to the Marathi speaking children, studying in standards V to XI, in the urban areas of Poona and Bombay. The average age for each standard was calculated and those beyond three years on either side of the average were rejected. In all, 5,327 students (3,146 boys and 2,181 girls) from twentytwo schools representing different strata of Marathi urban secondary schools were selected. The data were collected by questionnaires, through analysis of books issued to the students from the library, through talks with students, teachers and headmasters and by observing students in the libraries. The questionnaire issued to the headmasters sought information regarding library and reading room facilities, allocation of library periods in the time table, supervision and guidance. Teachers' observations regarding the reading habits and interests of the students were obtained through another questionnaire. The questionnaire for students included direct and indirect questions regarding their reading interest, home and school background.

Findings revealed that (i) twenty percent boys and twelve percent girls did not borrow a single book from the library; (ii) fiftythree percent boys and forty-nine percent girls did not get either sufficient number of books or the required type of books; (iii) in the lower classes, both boys and girls read 'wonder' stories; (iv) boys read more historical or biographical adventure stories as well as stories about children; (v) boys also read books meant only for adults; (vi) girls preferred fiction; (vii) boys read more detective stories; their interest in wonder stories declined over the years; (viii) about four to twenty percent boys and about five to ten percent girls in the different standards read books in English; (ix) only about nine percent of children had a home library of more than fifty books; (x) about eight to ten percent boys and about sixteen to seventeen percent girls, in different standards, did not read newspapers; (xi) as regards preferences, boys and girls in all standards preferred story books; the girls' next choice was drama (this second preference was indicated by boys in the lower standards only); (xii) girls preferred poetry, whereas the boys preferred prose; they liked the general knowledge books equally; (xiii) about two percent boys and about three percent girls had contributed more than five articles to magazines and weeklies; and (xiv) the total number of books per pupil varied from 8 to 20.

An attempt was made to find out the relationship between reading and cultural, economic and occupational background by classifying the schools

into three groups. Their reading interests were compared with the boys and girls in America and England.

203. *MATHUR, M. B., A Comparative Study of Levels of Intelligence among Professional Groups, Ph.D. Edu., AMU, 1966.*

The present study sought to prepare an intelligence scale and establish norms so as to facilitate a comparative study of levels of intelligence of entrants to courses of Engineering, Medicine, Law, Diploma in Engineering and Teaching. The A.C.E. Psychological Examination was adapted to Indian conditions. The test was divided into two broad categories, viz., quantitative and linguistic. Each of these broad categories included three subtests.

Item analysis was done on a sample of 320 students of undergraduate classes representing three major faculties of Arts, Science and Commerce. After item selection, the test, in its final form, was administered to 1,843 students in four teaching universities, viz., Aligarh, Allahabad, Banaras and Lucknow. Norms were established in terms of deviation IQs. The reliability of each subtest and the test as a whole, was determined by the K-R Formula 20. The coefficients of reliability of quantitative and linguistic subtests and of the total test were .94, .90 and .95, respectively. As for norms, the scale defined the students with IQs ranging from 90 to 110 as of average intellectual ability; those with IQ less than 90 and more than 110 were labelled as poorer and better than average, respectively. Students whose IQs fell between 60 and 80, and 120 and 140 were labelled as dull and bright, respectively; and those whose IQ was below 60 or above 140 were labelled as inferior or superior respectively. The test was then administered to entrants to professional courses in four universities and comparison of the groups with average ability was made. Significance of differences between means was tested. The mean IQs of entrants to Engineering, Medicine, Diploma in Engineering, Law and Teaching courses were 117, 111, 107, 102 and 101, respectively.

The study revealed that students admitted to various professional courses were not necessarily of high intellectual ability. Instances were not rare when the investigator found that students of low intellectual ability had secured admission to courses like engineering and medicine too. Assuming the high predictive validity of an intelligence test developed for these courses, the investigator recommends that the instrument can be used for screening stu-

dents at the time of admission. He, however, has not provided any empirical evidence for establishing such a validity of his instrument.

204. MEHTA, K., *Psychological Study of the Problem Child, Ph.D. Psy., Jod. U., 1969.*

The purpose of the study was to investigate into the behavioural problems—emotional, social and scholastic—of problem children.

The sample consisted of 150 problem children of age group 5-12 years. The tools used were the Bhatia's Battery of Performance Test of Intelligence and the Saxena's Adjustment Inventory. Case histories of the children were also collected.

The findings were as follows: (i) the percentage of problem children increased along with age, the highest being at 11-12 years; (24.79 for boys and 34.48 for girls); (ii) backwardness in bright children was observed in cases where the parents' attitude was either too harsh, dominant or indulgent; (iii) lack of punctuality, evasion, carelessness and slackness of parents appeared to influence children, making them irregular, deceptive and dishonest in school work; (iv) the maximum percentage of problem children was from labour class while the lowest percentage was from agriculturists; (v) as much as seventeen percent of the problem children belonged to poor families with more than six children; (vi) there was negative correlation between the incidence of problem children in families and their socio-economic status; (vii) children from certain castes were comparatively more maladjusted; (viii) eighty-eight percent boys and 20.6 percent girls had problems related to home surroundings while fortyfour percent boys and 6.6 percent girls had problems related to outside home surroundings; and (ix) conflict arose in the minds of the children having highly authoritarian parents who expected dependence and teachers who expected initiative and independence.

205. MITRA, P., *Longitudinal Study of Educational, Social and Emotional Development of a small group of Children, B.M. Institute, Ahmedabad, 1968. (NCERT financed)*

The study intended to trace the educational, social and emotional growth of a small group of children between 3 and 3½ years.

Twenty children—five girls and fifteen boys—attending Balghar and their mothers formed the sample of the study. All except one belonged to upper

middle class Gujarati families. The mother's education ranged from S.S.C. to postgraduation. Six mothers with academic degrees were working outside and one was a student. The children were studied longitudinally by (i) interviewing the mothers thrice, with special reference to their child-rearing practices, (ii) home visits by the investigator and (iii) observation in the school and school records. Interviews were taken with the help of a semi-structured interview schedule adapted from Sears' study on 'Patterns of Child Rearing'. Home visits were directed towards checking mothers' truthfulness and thoroughness in their responses to the interview schedule. It also provided observational counterpart in the home-setting for school observations. The school observations consisted of quantitative ratings on some personality dimensions. The information from the three sources was analysed separately with simple statistical methods and graphic presentations. Descriptive method was used in indicating common trends and individual differences. All the observations were related to the group only. Two case studies using full material were also prepared. The observations about the sample were compared with the observations of similar other studies.

The major observations were: (i) Mother's family background had its importance in understanding her attitudes and practices in child-rearing. (ii) In a joint family the mother's relationship to her mother-in-law was of importance for her confidence in guiding the child's upbringing. (iii) The ceremonies and restrictions imposed during pregnancy and after the child's birth were not appreciated by all the mothers. (iv) Hopes for a boy at the first pregnancy were usually entertained by fathers-in-law; mothers-in-law were less partial to the sex. (v) In general, the parents sought to arrive at some agreement about the best way of bringing up and disciplining the child. The traditional division of labour of wife attending the work in the house and husband undertaking the tasks outside was not found. (vi) The mothers in large families seemed to prefer peaceful, obedient children. The mothers in small families were more tolerant of stubbornness and defiance. (vii) Except one child all children were nursed in infancy. The period of nursing was from less than one month to one and a half years. All mothers indicated they were feeding the child according to a regular schedule but admitted that they did not keep to it strictly. (viii) A fairly obvious correlation was found between feeding practices in infancy and children's eating problems at a later age. (ix) The expectations about the time at which a child should be able to eat independently ranged from 15 months to

5 years. Teaching of desirable table manners was relied mostly on imitation and practical demonstration. (x) Mothers in small families appeared to be more successful in starting bowel training at proper time and completing it earlier. They also learned from experience when it came to the later born children. This was not found amongst the mothers in joint families. (xi) The women who had love marriage displayed the greatest sex-anxiety and prudishness. (xii) A tendency to allow boys to engage in girlish activities but to frown on girls taking part in rough boyish games was observed. (xiii) Children bathed by their fathers appeared to have less tendency to object to the procedure of bathing. (xiv) Mothers in large families and particularly the least educated expressed concern about general cleanliness. (xv) Most children slept with their mothers upto the age of 4 years or more. The earliest bed time for the sample children was 20.00 hours. (xvi) Mothers found bathing most troublesome. (xvii) The most emancipated mothers and the least educated were similar in certain respects. However, the reflections and motives for similar practices were not the same. (xviii) Majority of mothers expressed relief about having been able to send the children to school so as to have some peace at home. (xix) Sixty percent of the mothers thought it was important that children should do well in schools; ninety percent of the children were expected to fulfil their parents' ambitions about future career. Seventyfive percent of the mothers expressed opinion that their children were growing up too fast mentally. They mostly referred to their sharp memory. (xx) Children were exposed to a good deal of inconsistency in mothers' attitudes in encouraging independence and fostering dependence. (xxi) Household restrictions and rules for behaviour permitted or forbidden within the home ranged from fairly rigid rules to great permissiveness. (xxii) Most mothers appeared to be eager to keep the inevitable sibling quarrels from becoming too heated. They usually appealed to the better sense if the elder child was involved. (xxiii) Twentyfive percent of the mothers did not allow their children to mix with playmates in the neighbourhood while one-third actively encouraged their children to go out and play with others. (xxiv) Maternal attitudes and sanctions against physical aggression with regard to siblings, peers and parents were strict. Concern about passive resistance such as defiance, obstinacy was less. (xxv) Mothers from small families and working mothers in large families made greater use of reasoning, persuasion and reproachment for 'immediate control'. (xxvi) Negative reinforcements were more frequently applied than positive ones. (xxvii) The love-oriented tech-

niques of obtaining discipline and of punishing disobedience played a considerable role amongst the sample mothers. (xxviii) Mothers spanked more frequently than the fathers. This was done more as a result of the momentary mood. (xxix) The children in the small family group had shown some signs of guilt feelings indicating early formation of conscience. (xxx) Education for parents and teachers about the best way of offering sex information to the children appeared to be a great need. (xxxi) Children expressed aversion against being taken to cinema shows for the convenience of the parents. (xxxii) Many children aspired to be like adults in their dress preferences and other pursuits. (xxxiii) The period which the children spent at school, irrespective of age, was a more relevant factor in determining the degree of dependency as measured by rating scales used in school observations. (xxxiv) All the five girls rated lowest on dependency. (xxxv) Age did not influence the scores on aggression. (xxxvi) Early start with weaning and toilet training correlated with a later high aggression scores. (xxxvii) Children with younger siblings were more likely to rank high on aggression at least in the school setting than those who had elder siblings. (xxxviii) No uniform trend of change could be demonstrated for the group as a whole with reference to dependency. Rise in individual scores as children grew might be related to regimentation for formal education. (xxxix) No uniform trend of change was noted in aggression, as expected. (xxxx) The greatest mean average number of problems per child was found amongst the oldest children, amongst siblings, and in children of mothers highly educated but not working outside home. The lowest prevalence of problems was found amongst only children and children of working mothers.

206. MULAY, R. S., *A Study of Needs and Problems of Adolescents, University Training College, Nagpur, 1971. (UGC financed)*

The objectives were to study (i) the distribution of the high school population in respect of their socio-economic status, (ii) the problems of rural and urban students and their variations according to high, average or low socio-economic status, (iii) the attitudes and study habits of these different categories of school students, (iv) the differences amongst different groups in motivation for achievement, (v) the needs of different types of students and (vi) the value systems school children bring with them.

A sample of 1583 boys and 369 girls was select-

ed from schools in the rural and urban areas from eight districts of Vidarbha region of Maharashtra State. The Kuppaswamy's Socio- Economic Status Scale, an inventory on problems of adolescents, an inventory of study habits and attitudes and the Murray Needs Test were used. The Inventory of problems of adolescents based on S. S. Kulkarni's Marathi adaptation of the SRA Youth Inventory covered seven areas, namely, school, looking ahead, myself, getting along with others, family, health and things in general. The reliability coefficients by K-R method of the different sub-tests ranged from .68 to .81. The Inventory of study habits and attitudes was based on the Brown-Holtzman's Survey of Study Habits and Attitudes Inventory. Bhatnagar's adaptation of the Murray Needs Test measured variables, viz., achievement, exhibition, affiliation, succorance, dominance, abasement, nurturance, change and aggression. Sentence completion test prepared by Mukherjee was also used. The test of values contained ten values, viz., leadership, work of one's own liking, prestige, authority, stability, self-expression, profit, fame, social service and independence.

Some of the major findings were : (i) the boys, specially the urban boys, are found to have largest number of problems as against the urban girls having the minimum number of problems; (ii) the socio-economic status (SES) is highly related to the problems of adolescents; (iii) low SES group have more problems than others regarding school life, other school problems, ownself, relationship with others, home and family life, health and problems in general; (iv) rural students have more favourable study habits and attitudes than the urban students; (v) the urban girls have better study habits and attitudes than the urban boys; (vi) urban students have a significantly higher achievement motivation than the rural students; (vii) amongst the urban boys those belonging to high SES have higher achievement motivation than those in the average and low SES groups; (viii) the urban girls belonging to high and low SES groups have a higher level of achievement motivation than rural boys and rural girls in the corresponding SES groups; (ix) achievement and change are the two needs about which the adolescents are maximally conscious, aggression and dominance come next in importance; (x) girls are at the top in achievement, change and aggression, whereas the boys are at the tail-end in these; (xi) the rural students are maximally conscious of needs for dominance, achievement and change; (xii) girls have the least feeling of autonomy and the urban boys have the highest; (xiii) rural students, especially the girls, have a higher consciousness

about achievement than the urban boys; and (xiv) the highest preferred value by the boys and girls in urban areas is social service and the least preferred is leadership.

207. MURALIDHARAN, R., *Behaviour Problems of Children—Pre-School and Early-School Age*, Ph.D. Psy., Madras U., 1961.

The purposes of the study were: (i) to conduct a basic general survey of behaviour disorders prevalent in children of the pre-school and early-school-age; (ii) to study the relationships between behaviour disorders and certain determinants of behaviour such as the biological, social, personal and historic factors and (iii) to study two extreme groups of well-adjusted and maladjusted children with a view to finding out the role of certain factors such as maternal attitudes, maternal adjustment, children's intelligence and ethical discrimination in the development of behaviour disorders.

The sample for the study included 990 children. A parent inventory was developed and used along with a personal data sheet to elicit background information about the child with regard to biological, social, personal and historic factors. The other tools used were: the Parent Adjustment Inventory, intelligence tests and the Ethical Discrimination Test.

The study revealed that: (i) the total behaviour problem score is generally found to decrease as the chronological age increases; (ii) boys have more problems than girls; (iii) children of middle class show more problems than either those of the upper or the lower class; (iv) children whose mothers have a higher level of education show greater indications of behaviour problems than many of the children whose mothers are not well educated; (v) children of employed mothers have more problems than the children of non-employed mothers; (vi) the parent-deprived children manifest more problems than the non-deprived ones; (vii) children from the larger family units consisting of more than three children show significantly less behaviour problems than the children from the smaller family units; (viii) no significant difference is found to exist in the level of intelligence of the maladjusted and well-adjusted children; (ix) the attitude of over-acceptance is found to be more in the mothers of well-adjusted children than in the mothers of the maladjusted children.

208. MURALIDHARAN, R., *Motor Development of Indian Children—Developmental Norms of Indian Children 2½ years to 5 years*, NCERT, New Delhi, 1971.

The aims of this investigation were : (i) to study the patterns of motor development of the prescribed stage; (ii) to study the difference in motor growth due to sex, area and region; and (iii) to compare the Indian children with children studied by Gessel in U.S.A., in motor growth.

The study was conducted on a sample of 6,997 students with equal representation of boys and girls of each age level from two years and six months to five years, with intervals of six months, for the urban, rural and industrial areas of Ahmedabad, Allahabad, Bombay, Calcutta, Delhi, Hyderabad and Madras. Motor tests selected for the study were ball-play, standing, walking, running, climbing, skipping, hopping and jumping and hard skills. The five examiners from five centres were trained together for keeping procedures uniform. The testing was done individually. The sequence of testing was so analysed that adaptive language and motor tests were intermingled in order to sustain the child's interest. The analysis of data was done quantitatively and qualitatively.

The main findings of the study were: (i) the urban boys and girls throw the ball with right hand from 2½ years and well directed also, whereas rural boys do the same at the age of 3½ years; (ii) in kicking the ball, right footedness is established in all the groups; (iii) children from all areas can catch the rolled ball at the age of 2½ years; (iv) the urban boys and industrial girls can catch a chest high ball from the age of 4 years whereas urban girls do it from 4 to 5 years and rural boys from 4 to 4½ years; (v) the urban boys and girls stand on one foot from the age of 2½ years, whereas the rural boys and girls and girls of the industrial area can stand from 3 years; (vi) all the children are able to walk on 8 cms. and 6 cms. boards from 2½ years; (vii) urban children can walk on toes from 2½ years while rural and industrial children do it at 3 years; (viii) urban girls are able to skip, the average age at which they can do it, is 4½ years to 5 years; (ix) hopping like a frog can be done by majority of urban children at 2½ years, the rural and industrial boys do it at 2½ to 3 years; (x) hopping generally decreased as the age increased; (xi) jumping from a height of 40 cms. can be done by urban children and the industrial boys from 2½ years whereas rural children and the industrial girls do it by 2½ to 3 years; (xii) on the whole, the urban children are found to be faster in motor

development than the rural and industrial children; (xiii) in motor development, amongst the urban children, the children of Calcutta and the boys of Hyderabad are faster. Similarly amongst rural children the boys and girls of Allahabad, girls of Bombay and to some extent, the boys and girls of Calcutta are faster. The boys and girls of Delhi among rural children, the boys and girls of Delhi among industrial children, and the boys and girls of Ahmedabad among urban children, are found to be slower; (xiv) the regional difference did not remain the same irrespective of the area; and (xv) a comparison of the present result with Gessel's study shows that on the whole, the present sample appeared to be a little more accelerated in development than Gessel's sample, in most of the motor skills.

209. NAIK, S. N., *Reading Interests and Abilities of Adolescents and Adults*, Ph.D. Edu., Kar. U., 1963.

The investigation was an inquiry into the general nature of reading interests and habits of people above the age of fifteen. It also attempted to study the developmental process of these interests.

The two samples drawn from age groups 15-54 and 55-84 in proportion to percentage of literacy in these groups in the total population consisted of 3,300 and 290 individuals, respectively. The adolescent group (15-20) consisted of 1,100 individuals. They were again divided into two groups, 15-17 and 18-20. The former group consisted of those attending schools as well as those who had left school before completing S.S.C. The latter group consisted of adolescents of schools and colleges as well as those who had discontinued studies. The groups had a sample of 500 and 600, respectively. The criteria for distributing the sample, other than age, were educational level and occupation. A questionnaire consisting of five parts, viz., personal details, newspaper reading, magazine reading, book reading and professional reading in English, Kannada and Marathi was prepared and administered. The data were analysed in respect of newspaper reading, magazine reading, book reading, social psychology of readers and interests and studies in reading interests for various age groups, separately. A supplementary investigation on the reading development of VII and XI class students was done. Then secondary and post-graduate students were also studied for reading speed gained in different standards.

The analysis of the data revealed that (i) newspapers were read more than any other material;

(ii) women in every age group read less newspapers as age advanced; (iii) mature adults of graduate and higher levels spent much time in reading newspapers; (iv) early and late adolescents read less, young adults, middle aged and aged the least; (v) magazine reading increased with age; (vi) in the age groups 18-25 and 41-55, women read the most; (vii) magazines were read only for recreation and it was mostly confined to regional languages; (viii) average book reading was higher in the age group 15-17; (ix) fiction was read by all age groups upto forty and after that, interest was greater in religious and philosophical books; (x) percentage of library attendance among adults was only twentyfive; (xi) men read more than women; (xii) as regards professional reading, men graduates read more than women graduates and spent approximately one percent of their annual income on books and magazines; (xiii) sports magazines were very popular upto the age of 40; (xiv) developmental factors of reading related to the psychological growth and socio-cultural advancements, were different at different age levels; (xv) at the primary stage, only magazines and story books were read; (xvi) at the secondary stage, interests other than literary were not developed; (xvii) at the undergraduate and post-graduate stages, interests were mainly literary, confined to fiction; (xviii) the basic reading skill remained underdeveloped throughout from the high school to the postgraduate stage and (xix) the reading maturity scale scores increased with age or educational level.

210. NIJHAWAN, H. K., VERMA, P. and KALRA, S., *An Enquiry into the Determinants of Anxiety in School Children*, Dept. of Psy., Pan. U., 1968. (UGC financed)

The study sought to find out the determinants of anxiety to verify some aspects of Freudian theory. It was hypothesised that (i) anxiety would increase with age; (ii) girls would be more anxious than boys; (iii) urban children would be higher on anxiety because of parental pressure on achievement; (iv) children from private schools would report more anxiety than children from government schools and (v) lower class children would be less anxious than upper class children.

The first part of the study dealt with the relationship of the Test Anxiety Scale for Children (TASC) and General Anxiety Scale for Children (GASC) with factors like age, sex, area, school and socio-economic status. The second part of the study was restricted to thirtyone pairs of high and

low anxious children matched for the same set of variables plus intelligence. These children were studied with regard to case history data, child rearing practices, parental attitudes, family structure and tension balance. A multifactorial design was planned so as to study the effects of the independent variables on the dependent variables. Ten subjects of each sex belonging to each socio-economic status group were taken from each of VII, VIII and IX classes of the two types of schools from urban and rural areas. The sample consisted of 720 subjects representing all socio-economic classes. The Sarason's General Anxiety Scale for children (GASC), Test Anxiety Scale for children (TASC), Socio-Economic Status Scale (rural) by Pareek and Trivedi and letters to urban parents in connection with age of the child and family income were used as research tools. From these 720 subjects the high anxiety (HA) and low anxiety (LA) children were selected for the second phase by finding the quartiles of the distribution. The selected ones were tested for intelligence on the Bhatia's Battery of Intelligence Test. Thirtyone matched pairs of HA and LA, thus selected, were studied with regard to childhood experience, child rearing practices used by parents, parental attitude towards child rearing practices, adjective check list ratings, and family structure. Two parental interview schedules based on the Sarason's Parental Interview Schedule and 'Peers and Associates' questionnaire on child rearing practices were prepared in Hindi.

Analysis of the data revealed that (i) differences between means of the three age groups were not significant on the TASC, while on the GASC fourteen year olds scored significantly lower than twelve and thirteen year olds; (ii) comparison of the mean scores of the two sexes showed that on both GASC and TASC, girls were more anxious than boys; (iii) the interaction effect of sex and socio-economic status was significant; (iv) comparison of means indicated that on GASC, sex differences were more prevalent in lower class and lesser in upper class, while no significant differences were reported in the middle class; (v) the comparison of means showed that rural children were more anxious than the urban children; (vi) the interaction effects of area and socio-economic status and that of area and school were significant on the GASC; (vii) the t test applied to the means of the three socio-economic status groups revealed that lower class children had higher anxiety than upper class children. The main findings of the second part of the study indicated that (i) more parents of HA children favoured the statements regarding parents' unquestionable authority over the children; (ii) they believed that children

should be helped little in difficulties of life; (iii) parents of HA children indicated a greater discrepancy between their attitudes; (iv) the parents of HA children gave more extreme answers than parents of LA children; (v) more HA mothers used rejection as a measure of disciplining the child than LA mothers; (vi) more LA children got help at home when faced with difficulties in their lessons; (vii) no differences in family structure of HA and LA were indicated; (viii) the findings of the case history data revealed that HA children worried more about school in childhood; (ix) the HA children were happier at home than at school; and (x) the mothers of LA children were less satisfied with their progress than those of their counterparts.

211. *PALSANE, M. N., A Guide to Study Habits, Good Companions, Baroda, 1963.*

The study was undertaken with a view to finding out good and economic study habits.

The inventory was prepared after studying the factors contributing to effective learning and performance at the examination. The inventory contains statements covering the following areas: (i) budgeting time; (ii) physical conditions for study; (iii) motivation in learning; (iv) reading skills and (v) taking examinations. The individual is required to mark the statement which indicates his true behaviour. The inventory can be administered in groups or to individuals. To be effective, each statement in the inventory should be examined and discussed individually. Norms, the average score of different groups of students, are reported with reference to their achievement. They are calculated for the (i) preparatory class; (ii) first year degree class; (iii) final year degree class; (iv) postgraduate students; and (v) high school students of grades IX, X and XI.

The analysis reveals that (i) there are significant differences between first, second and third class (division) students; (ii) there is very little difference between one year of the degree course and another; and (iii) for predicting probable achievement in the examination, reference should be made to the appropriate class for comparing the raw scores.

212. *PANDEY, S. R., Interests of Adolescent Boys of Schools in Lucknow Division, Ph.D. Edu., Luc. U., 1960.*

The objective was to investigate the interests of adolescent boys of high schools in the Luck-

now Division and suggest some improvement in the education of adolescents.

Out of 145 institutions in the division, thirty-six were randomly selected. Questionnaires and rank order sheets were administered on 4424 students of classes IX and X. The teachers' questionnaire were administered to 238 teachers of these high school classes. The questionnaire for students consisted of two parts—one part containing questions pertaining to personal and social interests of adolescents and the other contained items on interest in recreation, sex, vocation and school work. The rank order sheet containing questions on twenty areas of life was given to be ranked by the students in order of preference. The teachers' questionnaire contained items on different interests of adolescents. The frequencies of the responses were classified. Probabilities and standard errors were calculated.

The analysis revealed that the adolescents desired to appear attractive. They were particular about the mode of dress and preferred boots to slippers. They were not in favour of control by parents and teachers. The adolescents appeared worried over their future. They wanted to amass wealth so as to be able to acquire independence in life and status in society. They liked the word 'Shri' before their names rather than any other and liked having their names written on their belongings. Analysis of their social interests revealed that topics of conversation with parents, teachers, friends and girls were very different. Their political interests were similar to those of their parents. They even took interest in the activities of the village panchayats and municipal boards. Their sense of patriotism and citizenship was fairly well-developed. Though faithful to their groups, their friendship was not permanent. Recreational interests varied from outdoor activities like hockey, volleyball and the like, to music and reading. Besides all these, they were interested in keeping pets, seeing movies, construction, weaving and making articles with rope. Their knowledge of sex was limited. They liked talking to girls. As regards their school work, the boys were more interested in Hindi, English, science and mathematics. They considered science and Hindi to be of much help in their future. Hindi was considered the easiest and English the most difficult. The adolescents were more interested in poetry, drama and story than in essay, novel and criticism. Their interests extended to various co-curricular activities. The adolescents preferred government service to any other vocation even though the starting salary might be the same. The adoption of any craft for a vocation was least liked. The adole-

scents' interests, in rank order, were physical health, studies and character while talks, sexual activities and music were the least liked.

213. PANSE, K. V., *Effect of supplementary Diet on the Physique of School Children, Ph.D. Edu., Poona U., 1960.*

The present work was an attempt to solve the problem of malnutrition among school children and to find out the effect of four supplementary diets, viz., Neera, Palm-gur, Skimmed Milk and Plantain on the physical development of children.

The sample consisted of pupils of age group 6 to 11, fifty pupils in each of the experimental and control groups. Collection of data was organised at different centres in the State of Bombay, viz., Dahanu, Kasa, Talwade and Bordi of Narpad centres. The four supplementary diets were provided to school children for a period of 6 months and the effect on weight and other abilities was studied. Aspects such as weight, agility, speed, armstrength and endurance were tested by using different performance tests before and after the treatment of supplementary diet. Analysis of variance, t test and correlation techniques were used for analysis of data.

The results of the study revealed that (i) it was possible to solve the problem of malnutrition fairly satisfactorily; (ii) effect of neera as a supplementary diet was good for weight, speed and agility; (iii) plantain had no effect on weight but had better effect on agility than skimmed milk; (iv) there was improvement in attendance in schools due to supplementary diet; (v) there was improvement in skin complexion of experimental group; and (vi) such cheap and locally available food stuff might be introduced as supplementary diet in schools.

214. PARAMESWARAN, E. G., REDDY, K. R. and RAO, T.N., *Aptitude of College Students: a Diagnostic Study, Dept. of Psy., Osm. U., 1968. (NCERT financed)*

The objectives of the study were to find out (i) whether students in the science and engineering courses had the necessary aptitude; (ii) the extent to which the courses preferred by students agreed with the courses pursued by them; (iii) whether the actual courses pursued were in consonance with their aptitudes; (iv) whether students' educational and vocational preferences were related to their aptitudes and (v) the comparison between the performance of the Osmania

University students with that of comparable American students.

The sample consisted of a group of engineering, arts, commerce and science students in the first year degree classes, young engineers working in engineering concerns, research scientists, research scholars and engineering and science students in the final year degree classes. The last four groups were included to find out the validity of the tests and the effects of the years spent in the course, on the test scores. General intelligence and scientific and engineering aptitudes were measured by a combination of subtests from DAT and Engineering and Physical Science Aptitude Tests (EPSAT). Vocational interests were measured using a blank which was constructed on the basis of the Ministry of Labour and Employment's Vocational Interest checklist. An Educational Preference Schedule was constructed and administered to obtain information regarding student's aptitude for the course, other courses preferred and factors affecting the choice of a course. Means, standard deviations and percentiles were calculated for the different groups.

The comparisons revealed that (i) on the whole the first year engineering and science students were superior to the arts groups; (ii) the engineering group was significantly superior, indicating a higher degree of scholastic, scientific and engineering aptitudes; (iii) arts students performed very high on verbal and abstract reasoning; (iv) a few arts students' performance was superior to the average performance of the other two groups; (v) most of the students in the three groups, specially the engineering students, appeared to be interested in the subjects they were studying; (vi) more science students than arts students expressed a dislike for their subjects; (vii) on the whole, responses to vocational interests revealed patterns in line with courses of study for the engineering and science groups; (viii) a considerable degree of preference was expressed for jobs entirely unrelated to courses of study; and (ix) the American engineering students appeared considerably superior.

215. PATEL, R. P., *A Critical Study of Recreational, Socio-Cultural, Intellectual and Occupational Interests of High School Pupils in Gujarat, Ph.D. Edu., MSU, 1967.*

The major objectives were : (i) to study various types of interests of school pupils, and (ii) to find out differences in interests, if any, due to age, sex, rural-urban origin and cultural areas.

The sample consisted of 3,963 pupils of classes IX, X and XI of both sexes in the age group of 13+ to 15+ drawn from schools of nine districts of Gujarat belonging to twelve different cultural regions. The data were collected by using a questionnaire.

It was found that travel and sports activities received first and second preferences among recreational interests. In socio-cultural interests, pupils' responses indicated two items very prominently, viz., collection of funds for charity shows and organising students' councils. Besides, school cooperative canteen and activities for the welfare of backward class people were of interest to the majority of students. Among the intellectual activities, class debates, general debates and book reading received preferences. The profession of medicine and engineering had the maximum appeal, while clerical work the minimum. On a comparative analysis it was found that the differences in interests on the basis of age and sex were significant. The differences on the basis of districts, urban, semiurban and rural were significant in a few cases. The cultural differences revealed that pupils of Bhal, Nalkantha and Charotar showed more interest in recreational and cocurricular activities. The students of Charotar showed maximum interest in excursions and extra reading. Pupils of Bhal, Nalkantha and Daskoshi showed interest in reading.

216. PHATAK, P., *Exploratory Longitudinal Studies of Children in the University Experimental School, Grades I and IV, Faculty of Education and Psychology, MSU, 1963.*

The study was undertaken with a view to compiling some observational data about children and exploring the growth tendencies and group and individual differences through observations. The common objective of exploratory studies of drawing some inferences for further study was also kept in view.

The longitudinal method which comprises repeated observations of the same children, was chosen. Children in grade I and grade IV from the University Experimental School were selected for the study. They were seventy in all. Time interval was considered as an important factor in development. Three observations were made during a period of seven months on height, weight, intelligence, creativity and social behaviour. The changes observed in the subsequent readings were considered to be related to the time interval and were studied comparatively.

The study revealed that the children of grade I showed that in a period of seven months the group as a whole had grown by one inch. The average

increase in height of girls was slightly more than the average increase in the height of boys. In the same period the whole group had put on three fourths of a pound of weight on an average. The average weight of boys had increased a little more than the average weight of girls. The relation between the increase in the average height and weight in seven months did not appear to be satisfactory. For one inch of increase in height there was just .75 lbs. increase in weight. As regards the social relations in the class, there was no child who was a complete isolate. However, the grade I children did not show confirmed relationship amongst themselves. Children of grade IV showed that the whole group had grown by one inch in a period of seven months. The group as a whole was of normal intelligence irrespective of grade and sex. In social acceptance more and more children showed the development of congenial relationship.

217. RAO, A.M.S., *A Diagnostic Study of Reading Difficulties of Students in High School, Ph.D. Psy., Mys. U., 1965.*

The investigation aimed at identifying specific reading weaknesses of poor readers in contrast to superior readers.

Two types of reading tests, namely, the Attainment Reading Test and the Diagnostic Reading Test were employed in the investigation. In the former category there were two tests, viz., (i) the Silent Reading Tests for Comprehension, and (ii) the Vocabulary Tests for Word Knowledge. In the latter category, there were five tests, viz., (i) the Word Perception Test—Tachistoscopic Presentation, (ii) the Phrase Perception Test, (iii) the Word Form Perception Test, (iv) the Word Recognition and Pronunciation Test and (v) the Word Discrimination Test. All the tests were designed both in Kannada and English. The data were analysed for English and Kannada separately. The study was done in two parts. The first part stressed superior and poor readers and the second part stressed the English and Kannada media of instructions. A 2x2x2 factorial design was developed having the categories of reading, media of instruction and standards of study as the independent variables.

The investigation revealed that (i) there was a positive and significant relationship between English and Kannada; (ii) students tended to be more variable on Kannada tests than on English tests, with the exception of the Word Discrimination Test, where the tendency was in the reverse order; (iii) correlation

coefficient between the scores of Diagnostic Reading Tests and combined reading attainment test ranged from 0.21 to 0.56 in English and 0.25 to 0.68 in Kannada, indicating good but not identical relationship between tests used for deriving superior and poor readers and tests for individual examination; and (iv) inter correlations among different tests both in English and Kannada indicated good but not identical relationship between tests.

218. *RASTOGI, P., Intelligence and Intellectual Stimulation received by VIII grade Students under differing styles of Junior High School Education in Uttar Pradesh, Ph.D. Psy., Agra U., 1967.*

This investigation has been undertaken to study how far the school systems or climates in the schools stimulate the students intellectually. It was hypothesised that the differences in development of mental or intellectual abilities of students can be attributed to quality of schooling, other factors being constant.

A battery of ten tests constructed and standardised in Indian situation by Chowdhary and one British test were used as tools in the investigation. Eighty-four students from age group of twelve to fourteen years of grade eight served as the sample. These students were drawn from convent schools with English as medium of instruction, higher secondary schools controlled by Allahabad Board of High Schools and municipal schools run by local bodies.

The battery of ten ability tests was factor analysed by Spearman's and Thurstone's techniques. The following factor patterns emerged: Verbal-Spatial Concept-Formation, Verbal-Numerical-Introduction, Memory and Educational Skills. The overall results confirmed the hypothesis and also revealed that (i) the educational system followed by convents provide better intellectual stimulation than the other systems; (ii) the difference between the higher secondary schools and municipal schools is not as marked as that between convent schools and the other two categories; and (iii) even if homogeneous atmosphere of intellectual stimulation is maintained in all the systems of schooling, parents' socio-economic status is likely to have an effect on the tests of intelligence, especially on those saturated with 'g'.

219. *ST. XAVIER'S INSTITUTE OF EDUCATION, Survey of the Mentally Subnormal Children in Greater Bombay, 1969.*

The aim was to determine the incidence of mentally subnormal children of school going age and

to create an awareness of a need for an effective action programme.

The sample was drawn from clinics, hospitals, doctors, schools for subnormals and private sources. In all, 4228 cases were recorded. Again from ordinary schools a sample of 2790 rated as subnormals by the teachers was also recorded. In order to confirm this, the Raven's Coloured Progressive Matrices Sets, A, AB, B were administered to the sample from ordinary schools. The rating by teachers was found to be highly valid. The data regarding the sample of subnormal children between three years and eighteen years were classified under three heads, namely, (i) data of the confirmed subnormals, (ii) data of the reported cases from the ordinary schools, and (iii) the additional data of the confirmed subnormals collected in 1969. The data of cases in each classification was further processed to show distribution according to the source, sex, age, language, religion, locality, and levels of subnormality in terms of ages.

The major findings of the survey were : (i) The survey was able to detect 4931 subnormal cases of children in the age range of three to eighteen in Greater Bombay. (ii) Of 4931 confirmed subnormal children, 63.5 percent of cases were boys and only 36.5 percent were girls. (iii) Referring to the school going population, almost equal number of boys and girls were registered in educational institutions. (iv) Out of 4931 subnormal children detected, only 889 were in special schools for subnormals. The percentage of subnormals catered for educational facilities, therefore, was about seventeen percent of the population only. Hence, eightythree percent of such subnormal children were bound to have no provision of any sort for education or training. Moreover, it is also worth noting that of the seventeen percent catered for in the special schools, the number of boys was double than that of girls. Even between the clinics and special schools only 1397 subnormals were cared for which comes to roughly thirtythree percent of their population. (v) It is surprising to note that the parents of the subnormal children were rather reluctant to consult doctors and specialists. Of 4931 cases, only 139 were referred to doctors and this is less in the case of girls; out of 1398 total number of subnormal girls, only thirtyfive were registered with doctors. (vi) Parents preferred to seek the help from the hospitals more than the clinics and the doctors. The hospitals had been referred to by them three times more than the clinics and twelve times more than the doctors, as revealed from the data. (vii) All confirmed subnormals were not tested by any agency. Out of 4069 confirmed subnormal children

reported from various sources, only 2239 cases were administered intelligence tests and their IQs calculated or the level of mental deficiency demarcated. (viii) Of the total, 1105 were private cases reported by distressed parents or by psychologists, counsellors and social workers. This worked out to be twentytwo percent of the total subnormals detected. (ix) The teachers reported 2790 children from ordinary schools, who according to them, were subnormal and needed to be tested. After administration of intelligence test to 1680 individual pupils, 862 were detected as subnormals, which comes to 51.3 percent of the tested cases. If every case referred by the teacher could be certainly described as scholastically backward, it may be argued that mental subnormality is an important factor responsible in 51.3 percent cases of scholastic backwardness. (x) Of the 4931 cases, the majority of them fall in the higher age group, viz., twelve and above, and show the highest frequency in the age of eighteen. The highest number of cases in the age group of eighteen may be due to the fact that once a subnormal child reaches this age, the parents show greater anxiety to do something for him so as to make him independent of others.

A noteworthy observation which needs to be reported is that parents and the special agencies maintain a widespread secrecy about such cases and are reluctant to give detailed information lest they be identified. Hence out of 4931 cases, eightyone refused to mention age, 155 mother tongue, fifty-two religion and 1603 the locality from where they came. This is a definite obstacle in any research study and a greater hindrance when educational or special programmes need to be planned on the strength of research findings.

220. *SHAH, C. Z., A Study of the Superior Children in the State of Gujarat, Ph.D. Edu., MSU, 1969.*

The aim was to survey socio-economic status, occupational interest and anthropometric characteristics of superior children of the Gujarat state.

Seven hundred students who secured seventy percent or more marks in S.S.C. examination in the years 1958 to 1962 were selected for the sample but only 356 pupils cooperated. For the purpose of comparison a group of thirtythree superior adults and 150 average students were taken as second and third sets of samples, respectively. Two sets of questionnaires, one for superior and average students and other for superior adult group, seeking informa-

tion on social, school, anthropometric occupation, interest and general occupational status and income, general health, emotional disturbances, etc., were used for data collection. Besides this, the K. G. Desai's Group Test of Intelligence was used. The data were analysed in terms of each category of information. Percentage, frequency and chi-square test were used for analysis.

The major findings were: (i) approximately ninety percent of the superior and average groups were in the care of their parents; (ii) superior children were found to come in greater percentage from upper castes; (iii) higher percentage of superior boys and girls came from the joint families; (iv) most of the superior boys and girls were not married during the period of their studies; (v) superior pupils passed S.S.C. examination at much younger age (14+) than the average pupils (17+); (vi) reading preferences for superior boys were more varied than the average group; (vii) the average heights of superior boys (65.64 inches) and girls (61.37 inches) were more than that of average boys (64.68 inches) and girls (58.6 inches); and (viii) the superior pupils rated themselves high in the fields of science, literature, reading, sports, travel, etc.

221. *SHARMA, A., Stabilisation of Abilities in the Adolescence Period (Cross Sectional Study), NCERT, New Delhi, 1967.*

The main objectives were: (i) to study the developmental changes in the magnitude of six mental abilities, viz., verbal, reasoning, numerical, spatial perceptual and mechanical and their stabilisation in the adolescence period of higher secondary school pupils; (ii) to study the pattern of abilities and their stability in respect of secondary school pupils of different levels of brightness; (iii) to see whether abilities stabilise during the adolescent period, and to find out at what age the plateau emerges in the growth curve of an ability; (iv) to find out whether the rates of growth of different abilities for different levels of brightness are different; (v) to see whether the abilities are differentiated during the period of adolescence; (vi) to see whether there is psychological evidence to justify a belief that children at delta class, 13+, could be sorted according to their abilities into four or five special types, each suited to one type of stream of secondary education; (vii) to see if the child belongs to one type at 13+, and whether he continues to remain in the same in later years; and (viii) to see whether strengths and weaknesses in abilities are relatively permanent.

The sample consisted of five boys' schools of Delhi representing the three levels of efficiency and having approximately the same number of students reading in classes IX, X and XI. The total number of students in the sample was 1660. The following tools were used: (i) the second test of the Predictive Battery of Differential Scholastic Aptitude, University Training College, Nagpur; (ii) the fourth test of the Predictive Battery of Differential Scholastic Aptitude, Nagpur; (iii) the test of Numerical Ability of the Differential Aptitude Tests, Psychological Corporation, New York; (iv) The Minnesota Paper Form Board Test, Series AA; (v) the test of Clerical-Speed and Accuracy of the Differential Aptitude Tests, New York; and (vi) the test of Mechanical Knowledge, Mechanical Comprehension and Mechanical Adaptability by Atmananda Sharma. The tests were administered to the sample of high school pupils in the year 1963. The data were analysed by the technique of analysis of variance and critical ratio.

The major findings are: (i) grade and age exert differential effect on the ability scores; (ii) the growth curves for verbal and reasoning ability are almost similar; the brighter groups begin at a higher level but grow at a slower rate than the duller group so that the differences between the groups of varying brightness noticed at the eighth grade tend to increase at the eleventh grade; (iii) the growth curves for numerical, clerical and mechanical abilities have almost similar characteristics; (iv) the growth curves of spatial ability indicate that brighter groups not only begin at a higher level but tend to grow at a faster rate so that the differences between the brighter and duller groups increase from grade VIII to grade XI; (v) the growth characteristics of verbal reasoning and clerical abilities are almost similar; these abilities continue to grow throughout the higher secondary classes—the rate of growth being maximum from class IX to class X; (vi) the growth of spatial and mechanical abilities is also similar; and (vii) the measurable differences in abilities increase with age and educational experience and the measurable differences in abilities decrease with the decrease in the level of brightness.

222. SHARMA, A., *Handbook on Sociometry for Teachers and Counsellors*, NCERT, New Delhi, 1970.

The handbook reports six interrelated studies.

A. The first study aimed at investigating the relationship between intelligence, achievement, per-

sonality and adjustment, interest patterns, life at home and at school, and the popularity and isolation of secondary school pupils.

The sample was drawn from three schools in Delhi—one boys' school, one girls' school and one coeducational school. In the boys' school, seventy-three students of class VII formed the sample. In the girls' school, the sample had 104 students. In the coeducational school, 113 students were in the sample. The various correlates studied were: intelligence, academic achievement, personality and adjustment, interest, family life, school life, and socio-economic status. The research tools used were the Raven's Standard Progressive Matrices, the Vyaktitva Parakh Prashnavali, the Chatterjee's Non-language Preference Record, examination marks, check-lists to measure the different aspects of family and school life.

The findings were: the popular students were of higher intelligence and scored higher on scholastic achievement test than the isolates. They had better personality adjustment. The interest profiles of populars and isolates were almost similar. The three most liked interests of popular boys were scientific, mechanical and technical while those of isolate boys were mechanical, scientific and sports. The three least liked interests of popular boys were outdoor, household and fine arts whereas the least liked interests of isolate boys were household, agriculture and crafts. Parents of populars had better education than those of the isolates.

B. The second study on "Social Skills and Activities and Sociometric Status" aimed at providing some understanding into the actual nature and frequency of social skills and activities possessed by adolescent students and to compare the social skills and activities of the popular, neglectee, isolate and rejectee.

The sample consisted of grade IX students drawn from three higher secondary schools of Delhi—one boys' school (N=160), one girls' school (N=80) and one public school (N=96). The various correlates studied were: social skills and activities and personality development. The tools used were: sociometric questionnaire, Social Acceptance Scale, and a social skills and activities scale constructed by the investigator himself.

The major findings were: (i) the populars possess more skills and activities than the neglectees but less than those of the rejectees. The public school rejectees perform largest number of skills and activities and even the neglectees possess more skills and activities than the populars; (ii) there are no significant differences in the percentages of different cate-

gories of boys and girls performing various skills and activities; (iii) the proportion of neglectees engaged in ten sections of ninth class of the three schools—one higher than that of populars and the proportion of rejectees engaged in learning music is also significantly higher than that of populars.

C. The third study "Personality Characteristics and Sociometric Status" aimed at investigating the personality characteristics of popular, neglected, isolated and rejected students.

Three hundred and twentyfive students reading in ten sections of ninth class of the three schools—one boys', one girls' and one public school of Delhi were taken as sample. The tool used had the 'Guess Who' technique to get the information regarding the way each member of a large adolescent group was perceived by the group. Thirtyfive personality characteristics were included in the scale. Student t test was used to find out the significance of difference between mean trait scores of populars and neglectees, populars and isolates, and neglectees and isolates. Unaccepted pupils comprised three categories, viz., isolates and rejectees and neglectees.

The findings of the study were: (i) the personality characteristics of unaccepted pupils are quite similar, whereas those of accepted and unaccepted students are quite dissimilar; (ii) populars are found to be more aggressive and overt, assertive, courageous and vigorous, confident, playing superiority role, well in group participation and friendly, whereas unaccepted pupils are more submissive, nonconfident, coward and weak, selfish and noncooperative and non-group participating. The characteristics which proved most significant in differentiating between accepted and unaccepted children fall into three syndromes: (i) strong aggressive personality characteristics, (ii) characteristics that count in direct interpersonal contacts, (iii) characteristics that are important in making better human relationship.

D. The fourth study about "The Sociometric Seating and Classroom Social Relations" aimed at studying the effect of sociometric seating on classroom social relations.

The sample consisted of the students of class VII of a government boys' higher secondary school located in a central government employees' colony for housing officers of grades I and III in New Delhi. Seventyone students, thirtyseven in controlled group and thirtyfour in experimental group were taken as the sample. The Wilcoxon Matched Pairs Signed Rank Test was applied to test that the social status of unaccepted pupils remained unaffected by sociometric seating.

The study found that sociometric seating appears to be a useful technique of improving interpersonal relationships within a group. It appears to weaken the barriers which stand in the formation of a cohesive class.

E. The fifth study aimed at investigating the effect of 'sharing responsibilities' on developing an atmosphere conducive to group living.

The sample consisted of thirtyfive students of class VII C and all the students of VII B taken as the control group. Three choice sociometric questionnaire and Bronfenbrenner's fixed frame of reference were used to categorise students into five sociometric categories. The programme of creating an atmosphere in the class for group living started with the election of two representatives for each of the three responsibilities decided. The representatives started working with the class for framing the rules and procedures to manage library, game activities and day to day class management.

It was found that as the programme advanced, there was marked improvement in the class tone; opposition and aggression had started giving way to cooperation. The democratic method of solving their differences and problems was found to develop a sense of responsibility in the individuals and of the group to individuals. A start for developing respect for reason and willingness to settle issues through an appeal to reason was made.

F. The sixth study on "Study of Biographies and Classroom Social Relations" aimed at determining the effect of study and discussion of biographies of some great men of India and biographical sketches of class fellows in restructuring interpersonal relations within class.

The students of seventh class of a government boys' higher secondary school located in a rural area of Delhi State were taken as a sample. The parents of the students taken as sample were in the lower socio-economic level. The students were categorised into sociometric categories, namely, popular, above average, average, below average, neglectees and isolates after administering the three criteria—three choice sociometric questionnaire and also using the Bronfenbrenner's fixed frame of reference. The Wilcoxon Matched Pairs Signed Ranks Test was also taken into use.

The investigator, from an analysis of objective data and from subjective observation, concluded that social emotional climate of the class was improved. A better understanding of a pupil's personality and the circumstances in which it developed coupled with the opportunity to interact, helped in accepting him instead of the fact that the class changed in

such a way that conditions of threat were reduced and individuals found satisfaction in participation in class work.

223. SINGH, K., *A Study of the Interest Patterns of School-going Boys and Girls and their Educational Implications*, Ph.D. Edu., Gor. U., 1972.

The purpose of the present work was to study the interest patterns of school going children in order to make their interests educative.

The study was conducted on a sample of 720 boys and 360 girls, selected through stratified random sampling technique, from the institutions (six for boys and four for girls) of four districts, namely, Gorakhpur, Gonda, Basti and Faizabad. The variables considered in the study were sex and grade. The seventh, ninth and eleventh grade students were taken up. The study utilised two techniques to measure the pattern of interests. The tools used were the observation, interview with children and with their parents. The test prepared had 165 items each in the area of stimulation and information. The data thus collected were treated with product moment correlation technique. The centroid method was used for factorisation to study the nature of clusters. Six factor solution for each sex separately had been calculated. The psychological and rational analysis revealed nine areas, viz., aesthetic, play, curiosity, gain motive, altruistic motive, personal acquisitive instinct, social activity, community life and miscellaneous.

The study revealed that (i) the six factors, three for each sex, separately gave the extroverted scientific interest, general gusto for life, and games and amusement for girls; and outdoor useful activity, general gusto for life, constructive amusements and games for boys; (ii) the difference was significant in aesthetic play, curiosity, altruistic, personal acquisitive instinct and in social activity and community life areas; (iii) interests cannot be categorised in tight homogeneous groups; interests get balanced through education, social conditioning, cultural forces, etc.; (iv) both the sexes were governed by the general gusto for life, girls showed their feminine temperament in all the factors obtained, boys reflected their masculine temperament, viz., interest in sports, games, scientific, constructive, productive activities, etc.; (v) the age of ninth class was peak age for the expansion of interests in all the nine sets of items; this age was the crucial age for

both the sexes; and (vi) aesthetic area, altruistic area, personal aspect, acquisitive instinct area were highly preferred among girls; gain motive and play area were nearly common areas for both the sexes and curiosity area, social activity and community life were more liked areas among boys in comparison to girls.

224. SINGH, L., *Patterns of Educational and Vocational Interests of Adolescents*, Ph.D. Psy., Agra U., 1967.

The purpose of the investigation was to study the patterns of educational and vocational interests of adolescent boys and girls from rural and urban areas. It was hypothesised that: (i) educational and vocational interests of adolescents are not directly related; (ii) the urban male and female students have different educational interest patterns; (iii) significant rural sex differences exist in commercial, constructive and agricultural educational groups; (iv) significant urban sex differences exist in the literary, scientific, commercial, agricultural, persuasive, social service and household vocations, but both sexes show equal interest in the constructive and aesthetic vocational areas; (v) significant rural sex differences exist in commercial, constructive, aesthetic, agricultural and household vocations, but not so in literary, scientific, persuasive and social service vocations; (vi) there are no significant sex differences with regard to educational interest patterns in urban and rural adolescents; (vii) significant sex differences exist with regard to vocational interest patterns; (viii) urban and rural adolescents have different vocational and educational interest patterns; (ix) subjects of courses offered and educational interests are directly related; (x) subjects of courses offered and vocational interests are also related.

The entire student population of urban and rural higher secondary schools and intermediate colleges of Agra District was stratified into four groups—urban male students, urban female students, rural male and female students. Accordingly, stratum-wise cluster sampling was done. A group of 500 students consisting of 125 urban boys, 125 urban girls, 125 rural girls and 125 rural boys was drawn. For measuring educational and vocational interests, an Educational Interest Inventory (EII) and a Vocational Interest Inventory (VII) were prepared. Reliabilities and validities were ascertained. Age and intelligence were controlled by the matched group technique and as regards the grade variable, only class IX was selected. Hypotheses concerning rela-

tionships were tested by correlational techniques and those related to interest differences were tested by Duncan's Range Test.

The findings revealed that educational and vocational interests of adolescents were not in agreement and thus educational courses of subjects for study and vocational interests were not directly related. The subject courses offered and the educational interests of male students differed significantly with regard to their educational interests in scientific and constructive areas but had more or less similar interests as regards literary, commercial, aesthetic and agricultural vocations. Significant zonal differences in educational interests of female students existed for the aesthetic and literary groups, but in the scientific, commercial, constructive and agricultural areas, the females of both zones seemed to be equally interested. Significant differences in vocational interests of male students for literary, scientific, commercial, constructive, aesthetic, agricultural, social service and household vocations existed; interest in persuasive vocations was equal. Urban and rural girls differed significantly with regard to vocational interests in literary, constructive, aesthetic, agricultural, social service and household vocations, but interest in scientific, commercial and persuasive areas was equal. Urban males were more interested in constructive and least interested in the agricultural courses, while rural males were most interested in literary and least interested in the aesthetic educational courses. Female urban students were most interested in scientific education and least interested in the agricultural courses, while rural female students were most interested in literary education and least interested in agricultural education. Urban males were most interested in literary and rural males in aesthetic vocations and both groups were least interested in household vocations. The urban girls were most interested in persuasive vocations and rural girls in household vocations, while both groups of girls were least interested in agricultural vocations. The coefficients of correlation between educational and vocational interests, between educational courses of subjects offered and groups liked most, between groups offered and vocational likings for them, were—.089, —.10 and —.60, respectively. In other words, high school students were studying educational courses which they did not quite like and which seemed to be in line with their vocational preferences.

225. SINGH, L. C., *A Comparative Study of Meaning of Occupational Titles between and*

within Two Language Groups in India, Ph.D. Edu., Del. U., 1969.

The aim was to study empirically how the boys feel about various occupations in different parts of the country, the possible attributes they find in workers, and the kind of judgments they make about them.

To study the psychological meaning of occupations an instrument known as Occupational Differential (OD) was developed. The following steps were involved in the development of the Occupational Differential: (i) selection of concepts in English; (ii) elicitation of Hindi|Kannada translation equivalents of concepts; and (iii) production and selection of scales, including determining the qualifier domain and opposite elicitations. The Hindi version of OD contained thirtynine bi-polar adjectival scales and the Kannada version contained twentythree bi-polar adjectival scales. After statistical procedure twenty scales were retained in each. The Hindi version of the scales was administered to a sample of 394 boys of standard X in the range of fourteen to seventeen years drawn from Lucknow city. The Kannada version of the scales was administered to a sample of 323 boys from Bangalore schools in the same age group and standard. Various statistical methods such as factor analysis, and analysis of variance were employed for analysing the data.

The findings were: (i) both Hindi and Kannada subjects categorise occupations into two groups, viz., (a) occupations which are highly professional, which have high earnings and high prestige level, and (b) service occupations which usually involve manual work and belong to a semiskilled or unskilled category having low prestige level; (ii) efficiency, work morality and appearance emerge as three important affective dimensions of occupations; (iii) high prestige occupations rank higher on efficiency, work morality and appearance than low prestige occupations; (iv) a high degree of similarity in polarisation of occupations is found across languages, religions, castes and income levels; (v) occupations are found to cluster together within a small portion of their affective space displaying their small connotative differences, which is true for both Hindi and Kannada groups; (vi) directions of affective meaning remain the same and occupations differ within a narrow range in meaningfulness; (vii) low prestige occupations are either neutral in appearance or are negatively evaluated on this dimension; (viii) high prestige occupations are positively rated on all three dimensions; (ix) language background of the subject and the level of occupation being rated

influence the affective meaning of occupations; and (x) occupations which have certain characteristics or which deal with inanimate things have higher efficiency than those which are manual or unskilled or deal with animate things.

226. SYED, M. A., *Factors Influencing the Vocational Choice of the Educated: A Social, Psychological Study of the Occupational Determinants of an Indian Sample, Ph.D. Psy., AMU, 1967.*

In this study an effort has been made to assess the relative strength and importance of various factors influencing the occupational choice.

The study was conducted on a sample of 275 doctors, engineers, lawyers, and teachers working in the districts of Aligarh and Agra. The sample was given a questionnaire. The returns (200) were analysed and treated statistically by chi-square technique.

It was found that none of the groups like medicine, engineering, law, teaching are influenced by father's occupation. A larger proportion of teachers as compared to other professional groups, was influenced by all the three value systems as reasons for their occupational choice. Subjective consideration of suitability, interest and ability were the basis of occupational choice by a larger proportion of teachers. A larger proportion of all groups report that they are being influenced by their teachers in making an occupational choice. A vast majority of all groups shows an agreement between the courses of study opted for at the school and the college levels and the professions finally adopted. A slightly larger number of doctors reported social and humanitarian considerations as factors influencing their occupational choice. Doctors were not influenced by the advice of others or by their identification with people who were in this profession. Doctors showed a high degree of satisfaction with their profession and desired that their children should enter the same profession. Engineers as a group did not take even a tentative decision to enter into a profession immediately after high school, but decided only at the college level. Engineers did have some information regarding the requirements of the job before entering it. The value systems, viz., social and humanitarian considerations, consideration of power and authority and monetary considerations did not exert a determining influence on the occupational choice of engineers, e.g., as a group they show that they are not

satisfied with their job. Lawyers were not influenced by value systems. Lawyers were found to be dissatisfied with their profession. Occupational preparation started only at the college level in the lawyer group. The subjects studied at the school and college level were in harmony with the choice of law as a profession but teachers were found to exert no influence on their occupational choice. All the three value systems, social and humanitarian, power and authority, and monetary considerations exerted a determining influence on the occupational choice of the teachers. Teachers as a group are dissatisfied with their profession. Teachers become aware of earning a living and entering a profession only at the college level. Teachers' group exerted a determining influence on the occupational choice of the teacher sample.

227. THAKUR, R. S., *The Secondary School Pupils' Interest in Reading Hindi, Ph.D. Edu., Bih. U., 1966.*

The purpose of the study was to find out the reading interests of boys and girls. The main objectives were: (i) whether there is a single general area of reading interest of the population under study; (ii) whether other specific areas of interest could also be ascertained; (iii) whether sex is a significant factor in determining the nature of reading interest; (iv) whether such factors as age, economic conditions, intelligence and academic achievement in literature have significant influence on the reading interest.

A stratified sample was selected on the basis of rural and urban areas, management and types of schools, higher secondary and multipurpose schools. The sample was heterogeneous and consisted of 819 students (423 boys and 396 girls). The tools used for data collection were: (i) questionnaires, (ii) the Bihar Verbal Intelligence Test, and (iii) school records for three successive examinations.

The important findings were: (i) no single general area or a group of areas of interest was discovered; (ii) the most popular area of interest is story and the least is criticism; (iii) reading interest is related to sex; it is more in girls than in boys; boys are more interested in the plot of the story whereas the girls are more interested in alluring description of situations; (iv) intelligence, academic achievement and age determine the amount of interest in reading in both the sexes whereas in the case of boys economic conditions alone affect the extent of reading interest; (v) type of reading interest

depends on intelligence, academic achievement, age and economic conditions; (vi) the brilliant pupils are more interested in abstract ideas while the ordinary ones are interested in the lighter areas of the study; (vii) boys as well as girls have high interest in stories and novels; besides these, the girls indicate high interest in narrative and short poems; (viii) both boys and girls have poor interest in epics, one-act-play, satire, essay, biography and criticism. The significant reasons for this being the difficulty in retaining the subject matter learnt, comprehending the text, grasping the central ideas, understanding the implied meanings, analysing and reconstructing the ideas and lack of concentration. Environment, lack of peaceful atmosphere, unfavourable conditions at home, pressure of academic and household work, and examination fear are some of the important factors which give rise to the above mentioned causes for lack of interest in this area.

228. VARMA, M., *A Sample Survey of Mental Ability in the Urban and Rural Secondary Schools of Eastern Uttar Pradesh, Dept. of Edu., Gor. U., 1960. (MOE financed)*

The purpose of the project was to discriminate between rural and urban areas, in respect of specified types of mental ability in a tract of the country which is noteworthy for its comparative urban affluence and rural destitution. The main aims were: (i) to compare the levels of mental abilities in urban and rural schools, (ii) to investigate the nature of difference, if any, and specify the type of ability in

respect of which differences existed and were significant, and (iii) to assign rational causes for the phenomena.

The sample of students was selected from seven districts of East Uttar Pradesh, viz., Azamgarh, Ballia, Basti, Deoria, Ghazipur, Gorakhpur and Jaunpur. In all, 934 students studying in class IX were picked out from the secondary schools situated in rural and urban areas of the districts mentioned. Tests were prepared on different functions of mental ability, viz., (i) Verbal General Mental Ability; (ii) Non verbal General Mental Ability, (iii) Gestalt Equivalent of General Intelligence, (iv) Numerical Ability, (v) Derivation of General Principles, (vi) Recall of Visual Association.

The major findings were: (i) the difference in the average age of rural and urban students was significant, the students of rural area were comparatively older than the urban students; (ii) the urban boys, though younger, had secured better marks in the General Mental Ability, Matrices, and Closure test; (iii) the rural boys were found superior in the Inductive Reasoning; (iv) no significant difference was observed in the scores of Numerical and Role-Memory tests: calculation of factor loadings has revealed that Factor I is obviously the general factor showing more or less the same order in both samples; Factor III represents abstract intelligence such as is often associated with culture-free, flags, matrices and other nonverbal group tests; Factor II is interesting in that it connects Closure (representing the Gestalt form of intelligence) and Inductive (representing abstraction of general principles of relation) in a bi-polar relation.