

Guidance and Counselling

A TREND REPORT

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Introduction

Guidance represents the confluence of social pressures, interdisciplinary insight into human behaviour and its dynamic concerns for the maximum use of human resources. It demands personalization in an increasingly complex and depersonalized society. For these reasons, the term 'guidance' is variously used to present a concept, a philosophy and a label for services aimed at enabling the individual to take realistic and judicious decisions warranted by the demands of a situation and commensurate with one's potentials.

The emerging convergence of many of the current manpower, rehabilitation and education programmes, purposes, techniques and competencies with those of guidance and counselling indicates that the government, the public and private agencies and the educational community may be willing to examine ways to develop and implement guidance and counselling in a manner having resonance with other manpower, rehabilitation and educational programmes. The guidance and counselling programmes, thus, have to assume responsibility of assisting individuals in the development of self-knowledge and interpersonal skills, life-career planning and self-placement competencies, and knowledge and understanding of their current and future life-career roles, settings and events, especially those associated with family, education, work and leisure.

The present-day guidance and counselling programmes developed essentially as a result of the work of Frank Parson. At the initial stages, guidance in India remained confined to psychological laboratories. In 1915, the Psychology Department of the University of Cal-

cutta opened its first Applied Psychological Laboratory. Later, in 1941, inspired by the work of this laboratory, Batliboi started a private guidance bureau at Bombay, and handed over the literature to Parsi Panchayat in 1947. During 1945, the establishment of the Department of Psychology and Institution of Psychological Research and Service at Patna University gave much fillip to the advancement of guidance. The Central Board of Secondary Education recommended to the Government in 1945 that employment Bureau and Vocational Guidance Bureau should invariably form an integral part of the future educational system. Later, the Secondary Education Commission (1952) placed greater emphasis on the provision of guidance services in schools and advocated the setting up of Central Bureau of Educational and Vocational Guidance at the national level and a bureau of guidance in each State. The Government of India made a beginning in the Second Five-Year Plan by establishing in 1954 the Central Bureau of Educational and Vocational Guidance. The Educational and Vocational Guidance Association started functioning in 1956. By and by, various State governments came forward to start organized services in the field. Guidance became a centrally sponsored scheme in the Third Five-Year Plan and thirteen bureaux were set up in various States. By the end of the Third Plan about 14 per cent of the schools were offering guidance of some kind. The education commission (1964-66) also emphasized guidance as an integral part of the educational process, and proposed acceleration of programmes for the development of guidance literature, occupational information material, etc and co-ordination of efforts and research in the area.

At present, the Central and State-level organizations—Government bureaux, employment departments of the States, districts or blocks, private agencies such as rotary club, YMCA, etc., and university and college-sponsored agencies are rendering guidance services to students. Career masters have been appointed in schools and made responsible for providing necessary guidance to students. For the training of guidance personnel, the NCERT, the State bureaux of guidance, Ministry of Education, and certain universities run training of one-year duration. The NCERT, Ministry of Education, the UGC and some other agencies also provide financial assistance to research projects in the field of guidance and counselling.

The world trend in the theory and practice of guidance and counselling, when viewed in the context of a series of developmental transformations under way in various countries, reflects that (a) there is an increasingly growing emphasis on the fusion of career education concepts and skills with the learning experiences of the curriculum, thereby implying that guidance programmes and personnel will be required to provide primary and supportive services as also leadership in career education; (b) the scope of the role of the counsellor at both the elementary and the secondary levels, has widened from merely acting as a counsellor to the students to acting as a consultant to teachers, parents and administration; (c) there is a growing demand for employing professional guidance personnel in cooperation and coordination with psychologists and social workers for making available guidance services of high quality in a stepwise fashion beginning with the elementary school level; and (d) rapid changes in the methodology and scope of guidance research and practices have taken place as a consequence of technological developments demonstrating clearly an accentuated shift towards evaluative studies.

The futuristic trends emanating from the continuum of developments in guidance and counselling indicate that extensive study and research will be devoted to improve selection criteria for admission and retention in preparation programmes for guidance workers. The content of programmes will increasingly reflect interdisciplinary approach. Professional standards for preparing secondary school counsellors will be met in the years to follow.

These trends, however, are not common to all the countries alike. In European countries, particularly England, France and Germany, the main focus is on resolving the fundamental conflicts about educational and vocational guidance, for example, whether guidance needs to be directed to efficient labour power utilization or

should it be directed to facilitating individual human development; whether it should aim at leading one to make occupational choice or should it be directed to career development; whether the counsellor should disseminate information or engage in counselling relationship, and whether guidance should be within the exclusive province of the professional counsellor or should it be conducted by the lay persons? In Belgium, the guidance services have been considerably expanded so as to be within the reach of all children. The follow-up studies, standardization of tests and research are being taken intensively. In Britain, several universities are engaged in training professional counsellors for employment in schools and concerted research efforts in the area are being made.

The guidance has gained momentum in the U.S.A. evidencing voluminous research in different aspects. The significant extension of knowledge in this field can be attributed to the mobility of the population, a greater number of students going to higher education, a wide range of curriculum in the secondary schools and the American faith and conviction in the efficacy of education.

Whereas the guidance movement in India has also caught up with the passage of time and is maintaining a study pace in its development, the position is none too satisfactory and lags behind the other developed countries in the provision of services and particularly in the scope and methodology of research efforts. The following are the broad areas that have been researched into and are characteristic of the Indian scene:

- A. Vocational Preferences/Aspirations/Choices/Interests.
- B. Vocational Development and Maturity.
- C. Exceptional Children.
- D. Needs and Problems.
- E. Student appraisal.
- F. Study Habits and Reading Interests.
- G. Selection of Students.
- H. Mental Health.
- I. Evaluation of Guidance Services.

A. VOCATIONAL PREFERENCES/ ASPIRATIONS/CHOICES/INTERESTS

Vocational Preferences

Grewal (1971) studied educational choices and vocational preferences of secondary school students offering science, agriculture, the humanities, home science and commerce as electives. The Vocational Environment

Scale, Vocational Preference Inventory, Educational and Vocational Preference Inventory and Joshi's General Mental Ability Test were used for data collection. Parameshwaran *et al.* (1968) studied the relationship between aptitude and preference for courses on a sample drawn from the first year and the third year of degree courses in engineering, science, arts and commerce as well as research scholars and young engineers. The study of Krishna and Ansari (1975) was directed to examining the relationship between risk, n-Ach and personality factors (anxiety, neuroticism, extraversion and security-insecurity). The sample consisted of 124 males — 97 undergraduates and 27 postgraduate students — under Magadh University. The Hindi version of Choice Dilemmas Questionnaire (CDQ), Sentence Completion Test (SCT), revised version of Comprehensive Test of Anxiety, Maslows' S-I Inventory and Eysenck Personality Inventory were used. Yadav (1979) made an attempt to study the nature and extent of relationship of intelligence, scholastic achievement, socio-economic status, values and needs with vocational preferences of 600 students of Classes XI and XII selected from the Intermediate Colleges of Agra. Sahoo conducted a study to find out the most preferable vocations of Class X students in relation to their socio-economic status (economically well-off or backward).

Vocational Aspirations

Chaudhary (1971) investigated the relationships among achievement motivation, anxiety, intelligence, sex, social class and vocational aspirations. Gaur (1973) studied the factors affecting the occupational aspirations of higher secondary school students of Delhi. The sample consisted of 207 boys and 98 girls of Class X drawn on the basis of quota sampling. Cattell's Culture Fair Intelligence Test, the Socio-Economic Status Scale by Jalota and others, the Occupational Aspiration Scale adapted from Haller and Miller Scale, the High School Personality Inventory and the Organizational Climate Description Questionnaire were used for data collection. Analysis followed the methods of correlation, multiple regression and ANOVA. Pillai (1977) conducted a study on 1899 students (984 boys, 915 girls) of Class X to find out the influence of intelligence on the occupational aspirations of students. Chadha (1979) studied the relationship among psychological (intelligence n-Ach adjustment and frustration) and social (SES, rural and urban setting and aspirations of fathers) and factors of vocational aspirations. A random sample of 713 Class X boys from four schools of Chandigarh and the six rural

schools of Ropar districts (Punjab) was taken. Statistical techniques of mean, SD, t-test, correlation and elementary linkage analysis, were used for the analysis of data. Uchat's (1981) study was aimed at studying the relationship between (a) vocational aspirations and intelligence, (b) intelligence level of the subjects and their father's education, and (c) intelligence level of the subjects and their father's occupation.

Vocational Choices

Syed (1967) made an effort to assess the relative strengths and importance of various factors in influencing the occupational choice of a sample of 275 doctors, engineers, lawyers, and teachers working in the districts of Aligarh and Agra. A correlational study by Vohra (1977) investigated the relationship between intelligence, aptitude, personality, academic achievement and vocational choices of polytechnic students ($N = 355$), by using Standard Progressive Matrices (Raven 1960) Space Relations, Numerical Ability, Mechanical Reasoning, and Abstract Reasoning aptitude Test of Differential Aptitude Test Battery, Eysenck Personality Inventory (Eysenck, 1964), Semantic Differential Scale (Mohan and Banth, 1975, 1977) and academic achievement scores from official records. Mean, S.D., intercorrelations, t-ratios and factor-analysis were employed for the analysis of data. Shah (1978) explored the scope for employment of the students of arts and home science faculties in vacation and part-time jobs and examined the employment plans of these students for vacation and part-time jobs. Interview schedule and comprehensive questionnaire were used for data collection.

Vocational Interests

Bardhan (1965) studied the development of interest among the boys of secondary schools in Calcutta with reference to four elective group courses or streams, viz., the humanities, science, technology and commerce, in multilateral schools, and thereby developed a tool for measuring interests useful in prediction and guidance. Mathur (1975) conducted an analytical study of children's free expression drawing for predicting their vocational interests. Pandey's (1960) study was aimed at investigating the interests of adolescent boys and making appropriate suggestions for corresponding improvement in educational programmes. More than 4,000 students of Classes IX and X were studied. Data were also collected from more than 200 teachers. Krishnan and Sidamma (1977) tested the homogeneity and stability of

vocational interests of women students ($n=250$).

Patel (1967) made a critical study of recreational, socio-cultural, intellectual and occupational interests of high school pupils in Gujarat with an objective (a) to identify various types of interest among the school population and (b) to find out differences, if any, on account of age, sex, rural-urban origin and cultural habitat. In another study, Singh (1967) tested the hypothesis regarding the difference in interests (educational and vocational) on account of sex, and rural-urban origin and the relationship between educational, vocational interests and the courses of study. Sinha (1978) explored the relationship of family environment with vocational interest of students on the hypotheses that the family environment did not predict the vocational interests of students studying in different types of institutions and offering different courses of study.

Siddhu (1974) standardised a Vocational Interest Inventory for diversification of students at the matriculation or higher secondary level on 2,150 successful students of Class XI and studied the differences between academic and vocational interests of students. Saheb (1980) investigated the differences between academic and vocational stream entrants to the +2 stage of school on academic abilities, non academic abilities and vocational interests.

B. VOCATIONAL DEVELOPMENT AND MATURITY

Research in the area of vocational development and maturity started in the early 1970s. Saraswathi (1973) thought of identifying the jobs on which home scientists were working and determining the competencies needed on each of the jobs. A total of 128 home scientists and 57 employers from Baroda were contacted and given a task list specifically designed for determining the competencies on the job. Reddy (1974) aimed at investigating the nature of vocational development in the high school boys of grades IX and XI in the southern States of India. Rural-urban and socio-economic variations in this regard were also studied. Roy (1978) examined the relationships of 25 social-psychological factors with vocational development, for a sample of 639 students — 222 students from schools, 213 from colleges and 204 from one university — from Delhi selected through the stratified sampling technique. Parlikar (1973) investigated the vocational maturity of high school students. The sample consisted of 600 high school students selected randomly from Grades VIII through XI from the city of Baroda. The tools for measuring vocational

maturity and for presumed correlates of vocational maturity were used. In a similar attempt Kathuria (1974) probed into some personality determinants of vocational maturity and career indecisiveness. The sample consisted of 1,000 females studying in undergraduate classes in arts and science at two women's colleges at Ajmer. The vocational maturity scale was developed for local use. Likewise, vocational indecision scale was developed for local use. An Indian adaptation of Taylore's Manifest Anxiety Scale was the third tool used for data collection. Hukam Chand (1979) advanced the study on the hypotheses: (a) positive and significant correlation exists between intelligence and measure of vocational maturity, (b) sex, grade to grade and rural/urban background differences exist in relation to vocational maturity, (c) self-concept, SES academic achievement and personality characteristics of adolescents are correlates of vocational maturity, and (d) different factors combine in specific constellations to yield a logical picture of correlates of vocational maturity. A sample of Classes VIII, IX and X of urban and rural schools of Chandigarh was randomly selected. Career Maturity Inventory (CMI), including Comptel e, Test and Vocational Attitude Scale, was constructed and standardized by the investigator. Agarwal (1981) conducted a study on students of Class VIII, X and XII ($N=869$) with the objective of studying (a) the developmental patterns of career maturity in both sexes, (b) sex differences, and (c) the relationship of career maturity with selected socio-psychological variables. Statistical techniques of 2×3 ANOVA, product-moment correlations and stepwise multiple regression analysis were used for the analysis of data. Paul's (1981) study aimed at finding out the educational and psychological factors influencing the goal behaviour of the students of Standards of XI and XII.

C. EXCEPTIONAL CHILDREN

Advani (1965) studied the educational and psychological problems of the blind children in the age-group 7 to 21 years with a view to furthering research in the area.

Bhatt (1966) identified the gifted children by employing inexpensive procedures (IQ scores, achievement scores, teacher's observations and academic record) and studied their personality traits by employing a list of 39 traits validated against the criteria of known groups and contrasted groups and for which retest reliability was also ascertained. Identification of the gifted was also accomplished by Deo (1969) by using verbal-non-verbal tests. The gifted and the non-gifted groups of adoles-

cents were studied for differences on the self-concept inventory, the Bernreuter's Personality Inventory, Bell's Adjustment Inventory and Questionnaire for the home and school background. Shah (1969) conducted a survey of superior children in the State of Gujarat in respect of socio-economic status, occupational interest and anthropometric characteristics. Comparisons were made between superior pupils and average pupils, and superior pupils and adults. Walia (1973) too, studied the self-concept of gifted adolescents. A self-concept inventory for measuring perceived, ideal and real self-concepts was standardized and comparisons were made between the gifted and the non-gifted groups of adolescents. Gnanambal (1982) tried to identify the gifted by using Group Intelligence Test, AH₂ and AH₃ Creative Thinking Test, Creativity Test, Taylor's Manifest Anxiety Scale and Kuppaswami's SES Scale. The relationship of giftedness to social qualities, sex and socio-economic status was also explored.

A survey of the mentally subnormal children was carried out by St. Xavier's Institute of Education in 1969. In all, the study detected 4,931 subnormal children in the age-range of three to eighteen years. Verma (1968) investigated frustration and maladjustment in retarded school adolescents by using Jalota's General Mental Ability Test, Asthana's Adjustment Inventory and a questionnaire.

Dhondiyal (1964) used art as a projective technique for identifying deviant behaviour. Bhatt and Advani (1965) studied conformity and deviation among students and their acceptance of the cultural values by measuring their attitudes towards some important values of Indian culture.

Bhalla (1970) constructed and standardized a test for identifying disciplined and undisciplined students and compared the two groups with respect to their self-concept.

Roy (1969) compared low achievers and high achievers in respect of adjustment. The two groups were matched for education and cultural and socio-economic background, the standardization of student adjustment questionnaire was also done for local use. Vanarase (1970) studied the relationship of scholastic underachievement to a large number of intellectual, affective, socio-economic and personal factors. He matched groups of underachievers and normal achievers on twenty-five different variables. Mishra (1977) surveyed the nature and extent of educational backwardness in science and mathematics among the students of Class VIII and studied the difference in the attainment in science and mathematics arising out of such factors as rural

and urban area and sex. He also determined the factors that operated singly or together in causing educational backwardness and the relationship of extraneous factors and low level of intelligence with educational backwardness. John and Abraham (1981) identified the non-intellective variables which differentiated between achievers and underachievers among college students and gave the implications for guidance programmes.

Mehta (1969) made a psychological study of problem children in order to identify their emotional, social and scholastic difficulties. The sample consisted of 150 problem children of age-group 5-12 years. The tools used were Bhatia's Battery of Performance Test of Intelligence and Saxena's Adjustment Inventory. The case histories of children were also studied.

D. NEEDS AND PROBLEMS

George (1968) surveyed the needs and problems of 1,112 school students and 1,569 college students. A problem checklist with 215 items was used to collect data. Palsane (1969) made a study of some problems and perceptions of college students and covered such areas as: (i) students' needs and facilities, (ii) students' problems, (iii) agitation by students, (iv) academic standards, and (v) socio-political life of the country. Mulay (1971) studied the needs and problems of adolescence with the objective to study (a) the distribution of high school population in respect of socio-economic status, (b) the problems of rural and urban students and their variations according to high, average or low socio-economic status, (c) the attitudes and study habits of these different categories of school students, (d) the needs of different types of students, and (e) the value system that different school children brought with them. Palsane (1970) in another study, studied the problems of more than 900 college students with regard to education, family, health, socio-economic background, and personal-emotional and vocational adjustment. Venkata Rami Reddy (1972) conducted a study on 3,600 pupils, belonging to Classes IX, X and XI distributed evenly among four localities, to examine the vocational needs of male pupils at the terminal stage of secondary education in relation to occupational choices and other variables (locality, the length of schooling, general mental ability, socio-economic background of the family, parents' occupational and educational status). Phatak (1973) undertook a study to identify the problems of normal school-going boys of age 7 through 10 years.

Muralidharan (1961) conducted a basic general survey of behaviour disorders prevalent in children of the pre-

school and early school age, studied the relationship between behaviour disorders and certain determinants of behaviours and also studied the role of material adjustment, children's intelligence, and ethical discrimination in the development of behaviour disorders in two extreme groups of well-adjusted and maladjusted children. A locally developed inventory, personal data sheet, parent adjustment inventory, intelligence test and ethical determination test were used for data collection. Mehta (1969) investigated the behavioural problems of 150 problem children of age group 5-12 years by using Bhatia's Battery of Performance Test of Intelligence, Saxena's Adjustment Inventory and the case history technique. Alvares (1961) also conducted a study on 100 problem children by interviewing parents and children and by making other information available through psychologists and psychiatrists. Palsane (1970) aimed at testing the hypothesis of positive relationship between personal health and parental education on the one hand and adjustment on the other. Seth (1970) conducted a sociological study of 500 female teenagers of Lucknow City with a view to identifying their adjustment problems related to home, school, sex and personal, social and vocational adjustments. Phatak and others (1972) studied adjustment to nursery schools through shifts in behaviour mainly to identify the pattern of adjustment process over a period of time on a sample of sixteen boys and eight girls with the mean age of 2.76 years. Percentages and Cochran's Q-test were applied to analyse the data based on three observations of children during three significant periods of schooling. Pereira (1974) made an attempt to examine maladjusted and well-adjusted groups of preadolescents with respect to intelligence, scholastic achievement, needs, anxiety and self-concept. Data were collected from a sample drawn from Grades VII and VIII pupils of Mangalore by using the Mooney Problem Checklist, Raven's Standard Progressive Matrices, Taylor's Manifest Anxiety Scale, Self-concept Rating Scale, scholastic achievement tests and a verbal projective technique.

E. STUDENT APPRAISAL

Phatak (1963) explored the growth tendencies and group and individual differences through observation in children of Grades I to V. Mitra (1968) undertook a longitudinal study of educational, social, and emotional development of a small group of children between 3 and 3½ years of age. Muralidharan (1971) studied the patterns of motor development in children between 2½ and 5 years and established norms at intervals of six months.

Studies by Panse (1960) and Chandrasekaran (1970) were directed to study the effect of dietary intake on physical development and nutritional status. The former studied the effect of four supplementary diets, namely, neera, palm gur, skimmed milk and plantain, on the physical development of children in the age group 6-11 years while the latter compared the dietary intake and nutritional status in the school boys aged 7 to 12 years and belonging to different socio-economic status groups.

Johri (1960) studied the personality development of post-adolescent girls and made efforts to assess the impact of participation in games and co-curricular activities on the total personality make-up. Palsane (1965) standardized a personality inventory for measuring the factors of introversion, extraversion and neuroticism. He employed the forced choice technique in the construction and standardization of the inventory. Patel (1965) conducted a study on 198 children from typical Anglo-Indian schools of Calcutta with a view to investigating the patterns of acceptance, rejection and friendship by an English-speaking child of a non-English-speaking child in the context of language, personality, the level of social development, intelligence, age, opportunity for contact among the members of the group, and sex. Nijhawan *et al.* (1968) sought to find out the determinants of anxiety to verify some aspects of Freudian theory. Interrelationship between intelligence, achievement, personality, adjustment, interest patterns, life at home and in school and popularity of secondary school pupils was studied by Sharma (1970).

Desai (1954), Nafde (1961), Phatak (1963) and Mallin (1964) worked on the construction and standardization of intelligence tests of different types — verbal, non-verbal, performance, individual or group — suitable for various age levels. Varma (1960) attempted to discriminate between the rural and urban area in respect of specified type of mental ability in a tract of the country which is noteworthy for its comparative urban affluence and rural destitution. Ganguly (1965) undertook a study of intellectual development under different educational systems. The sample consisted of 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 84 students in the age-group 12 to 14 years studying in Grade VIII. A battery of ten tests constructed and standardized in Indian situation by Chowdhary and one British test were used as tools and data were factor analysed. Sharma (1967) studied the developmental changes in the magnitude of six mental abilities, namely, verbal, numerical, reasoning, spatial,

perceptual, and mechanical, and traced the process leading to stabilization of these abilities.

Verma (1960) standardized a predictive battery of tests for measuring differential scholastic aptitudes. Deshpande (1967) standardized a predictive battery test for measuring the aptitude for science courses in secondary schools. Sharma (1967) made a cross-sectional study of stabilization of abilities in the adolescence period. 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. Data were analysed by the technique of ANOVA and critical ratio.

Dave (1958) studied the language and arithmetic abilities of children between 8 and 13 years of age in a Bombay school. Maniar (1961) constructed and standardized tests of mathematics and language abilities for Gujarati-speaking children in the age-group 13 to 17 in the Greater Bombay region.

Pandey (1980) constructed and standardized a test of mathematical aptitude and studied the relationship between mathematical aptitude, on the one hand, and sex, rural-urban setting, verbal-non-verbal intelligence and achievement, on the other. Chatterji *et al.* (1972) determined the relationship between biographical aspects, aptitude and achievement in the technical stream, by taking a sample of 52 students of Class X and 33 students of Class XI enrolled in the technical stream. Biserial correlation coefficients were calculated to see the relationship among various factors.

Palsane and Pathak (1971) made a normative survey of educational achievement across a period of ten years. Twenty-four standardized achievement tests covering eight subjects in each of the three grades, i.e., VIII, IX and X, were administered to a sample of about 2,000 pupils all over the State of Gujarat. 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 standardized, educational and psychological tests.

F. STUDY HABITS AND READING INTERESTS

Study Habits

Jamaur (1961) constructed a study habit inventory and attempted to find out some psychological factors underlying the study habits. Palsane (1963) contributed to the development of a study habit inventory and made efforts to find good and economic study habits. Shejwal

(1980) also made an attempt to identify good and poor study habits of students in relation to sex. A random sample of 50 boys and 50 girls, belonging to Class XII and first, second and third year degree classes, was taken and Palsane's Study Habit Inventory was used for the collection of data.

Nirmal Kanta (1979) made a comparative study of the study habits of randomly selected 2,966 students of Classes IX and X from rural and urban areas, further classified into arts, science and commerce groups, and made an attempt to find out the relationship between study habits and scholastic performance and contribution of study habits to performance in different school subjects. The data were analysed by employing product moment coefficient of correlation, cluster analysis and critical ratios.

Reading Interests

Manohar (1953) studied the reading interests of Marathi-speaking boys and girls at the secondary school with the objectives (a) to study the reading interests of boys and girls and (b) to enable them to cultivate the right type of reading attitudes and habits. The aim of the study by Naik (1963) was to enquire into the general nature of reading interests and habits of people above the age of fifteen and to study the developmental process of these interests. Singh (1965) aimed at establishing some working propositions which related to various aspects of interest and various factors affecting its growth. The study was conducted on 1,436 successful candidates from arts, science and agriculture. The interest inventory was developed for local use. Thakur (1966) studied the reading interests of boys and girls.

Rao (1965) made a diagnostic study of reading difficulties of students in high schools by comparing the poor readers with the superior ones. Kundu (1970) studied the effect of distraction through music on reading efficiency.

Interest in Science

Sumathykuttyamna (1973) enquired into the science interests of high school students and probed various science competencies. The study was accomplished on a sample of 1,000 students of Grades IX and X. A questionnaire-cum-inventory for pupils and a separate questionnaire for teachers were used for data collection. In another investigation, Chatterji *et al.* (1978) tried to find out the effect of science interest at different levels of potential ability with respect to science and study the pre-

dictive value of interest in science and scientific aptitude in predicting success in higher secondary science. Senapati (1978), in a study of 180 boys and 27 girls of Class XI (science group) belonging to the middle class families, determined the relationship between interest and ability with regard to achievement in science subjects. Strong Vocational Interest Inventory, Ghosh's Science Aptitude Test and Intelligence Test and Test of Scientific Achievement were used for data collection.

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 schools from four districts of U.P. Sharma (1975) looked into the personal and sex interests of school-going rural-urban adolescent boys and studied further their maturity and adjustment.

G. SELECTION OF STUDENTS

The Bureau of Psychology, Allahabad, devised (1952) a battery of tests to forecast success in various streams of secondary courses on the basis of individual testing and again in the year 1956 undertook a group guidance project for the allocation of junior high school leavers to four types of higher secondary education. Mascarenhas (1964) carried out an investigation into the suitability of students for admission to the medical colleges of Bombay University. 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 different courses of studies, viz., engineering, medicine, law and teaching. Gautam (1973) also made a comparative assessment of the Integrated Selection Test (IST) and Pre-Medical Achievement in respect of their predictive validity for admission to MBBS or Armed Forces Medical Colleges. Rao (1977) examined the feasibility of using MPFB Test in the selection of students for admission to engineering courses and further examined if the scores on the test were related to students' performance in engineering courses. MPFB Test Forms A and B and Raven's Standard Progressive Matrices were used. Scholastic performance was obtained from examination records. Pearson Product Moment Correlation was used for data analysis.

H. MENTAL HEALTH

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. Joshi (1979) used library research and documentary analysis for the historical retrospect of mental health movement and descriptive survey method to study the present position of mental health facilities in secondary schools in Greater Bombay. The tools employed were questionnaire, interview, observations, visits and correspondence. Basumallik and Bhattacharya (1980) surveyed and compared the views of Indian respondents (N=369) with those of Indian experts (N=122). A fifty-item mental health questionnaire was used for surveying views.

I. EVALUATION OF GUIDANCE SERVICES

Attempts have been made to evaluate the effectiveness of guidance strategies on reducing examination anxiety, academic achievement and study habits. Bhatnagar (1972) studied the effect of individual counselling on the achievement of bright underachievers and aimed at identifying some factors associated with underachievement. The study was conducted on a sample of 20 bright underachievers selected from Classes VII through XI from one school in New Delhi. Dandapani (1976) conducted a study on Class X students to find out the effectiveness of group guidance programme and academic counselling on academic achievement among high school underachievers and to see the relative effectiveness of the programmes among counselled underachievers belonging to the families of professional class, merchant class and clerical class groups by employing pretest-posttest control group design. Ghosh (1980) used Solomon four group design to study the effect of counselling on study habits and academic achievement, and comparative effectiveness of leader-centred directive counselling, short-span counselling and group-centred behavioural counselling. Dastidar (1981) made functional analysis of examination anxiety among high school students (N=100) and evaluated the effectiveness of group counselling method to reduce examination anxiety using pretest-posttest control group design. Srivastava's Examination Anxiety Questionnaire, Sen's Study Habit Inventory and a semi-structured interview schedule were used. Behavioural counselling technique was developed by the investigator. Khatri (1982) undertook a study to find out the efficacy of group relaxation, group counselling and group desensitization behavioural strategies for reducing examination anxiety among girls and to find out the relative efficacy of the above three strategies. F-ratios

and t-test were employed for analysing data.

Gajjar (1974) surveyed and reviewed the student personnel services provided at the M.S. University of Baroda with a view to finding out how far the university students, teachers and administrators were aware of them and to what extent these services were being utilized.

Research Gaps and Priorities

The first survey, 'A Survey of Research in Education' (Buch, 1974) had reviewed forty-two studies in this area. 'The Second Survey of Research in Education' (Buch, 1979) had reviewed forty studies. The present volume includes about forty studies. These studies have been completed during the last four decades. These reviews reveal lopsided efforts in the sense that certain areas have been extensively explored (vocational preferences, interests, aspirations, choices of students, etc.) whereas areas like vocational maturity, factors related to vocational maturity, effectiveness of guidance services as integrated with classroom instruction, facilitating vocational development and attainment of educational objectives have been rather neglected by researchers. The gaps in research are many and wide. There is need to identify these gaps and fix priorities if research is to influence educational developments taking place currently. The needed priorities of research in guidance and counselling are discussed below.

- (a) At the elementary level, children find difficulties in developing certain basic concepts in language and arithmetic. They find it difficult to develop reading skills. Guidance needs in this area require the attention of re-

searchers. Very little work has been done in helping children develop concepts and reading skills. This is an area of priority for researchers. The studies should be both diagnostic and developmental.

- (b) The first generation literates are entering the elementary schools. They find it difficult to adjust to classroom instruction primarily attuned to the requirements of the children from the non-disadvantaged sections of society. Special researches need to be undertaken about the nature, scope and strategies of guidance services for these children.
- (c) The guidance tools in use at present are western culture oriented. Research is needed to develop guidance tools and techniques suitable to Indian children. There is an urgent need to develop guidance techniques at various stages of education.
- (d) The introduction of 10+2 pattern of school education and the accompanying emphasis on vocationalization of secondary education, especially at the +2 stage, has necessitated realistic guidance programmes for students in the late adolescent period. The longitudinal studies beginning from the first year of the secondary school to the last year of the secondary and/or higher secondary stage tracing the development of educational, vocational and recreational interests of students as related to other growth patterns, need attention on a priority basis. This area attracted the attention of researchers during the sixties but has been ignored thereafter.

ABSTRACTS: 620-658

- 620.** AGARWAL, N., *A Study of Factors related to Career Maturity of School Students*, Ph.D. Psy., MSU, 1981

The main objectives of the investigation were: (i) to study the developmental pattern of career maturity across three school stages (Standards VIII, X and XII) in both sexes, (ii) to study the sex differences in career maturity at the three school stages, and (iii) to study the relationship of career maturity with selected socio-psychological variables, and to find out the most relevant variables which would predict career maturity at the three grade levels in boys as well as in girls.

The investigation was carried out on a sample of 869 students (438 boys and 431 girls) of Standards VIII, X and XII, selected on a random stratified basis from the schools of Delhi. The Career Maturity Inventory Attitude Scale of Crites was specially adapted by the investigator for measuring career maturity of the students. Other tools used were Culture Fair Intelligence Test of Cattell and Cattell as adapted by Singh and Rao, High School Personality Questionnaire of Cattell as adapted by Kapoor and Mehrotra, Occupational Aspiration Scale of Grewal and Extra-Curricular Activities Inventory developed by the investigator. A 2×3 analysis of variance was carried out to study the relationship of career maturity with grade and sex. Product moment correlations were computed to study the relationship of career maturity with different socio-psychological variables. Step-wise multiple regression analysis was used to identify the best set of predictor variables.

The major findings of the study were: (i) There were significant differences in the career maturity measures across three grades with an incremental trend in scores, showing significant relationship of career maturity with grades. A continuous pattern of growth provides support to the developmental theory of career behaviour in relationship to exploratory stage. (ii) Sex differences were found in career maturity on the dimensions of self-appraisal, occupational information, planning and choice attitude. (iii) A significant positive relationship existed between career maturity and socio-economic status, intelligence, level of vocational aspiration and participation in school and out-of-school activities. (iv) There was a significant positive relationship between career maturity and certain personality factors, namely, sociability, ego-strength, surgency, super ego-strength

and adventurousness, and a negative relationship with excitability, dominance, sensitivity and ergic tension. (v) Step-wise multiple regression analysis showed intelligence and socio-economic status to be the most significant variables contributing to the prediction of career maturity. Also, some of the personality factors, namely, sociability, adventurousness, super ego-strength, self-control and surgency, were found to be significant in the prediction of the career maturity among both boys and girls.

- 621.** BASUMALLIK, T. and BHATTACHARYA, K.P., *Views on Mental Health: a Preliminary Study*, Psychometric Research and Service Unit, ISI, Calcutta, 1980

The aim of the study was to gather views from a sample of Indian respondents regarding mental health and compare them with the views held by Indian experts.

An incidental sample of 365 laymen expressed their agreement or disagreement, on a five-point rating scale, with a 50-item mental health information questionnaire. A group of 122 mental health experts also indicated their approval or disapproval of the items of the same questionnaire.

The findings of the study were: (i) Responses of the laymen were not markedly different from those of the experts. (ii) The older and the less educated seemed to be relatively misinformed. (iii) Popular information in mental health area was not well crystallized. (iv) No significant cross-cultural differences were found between Indian and American subjects except that both our experts and laymen laid more emphasis on the seriousness of mental health problems.

- 622.** CHADHA, S.S., *A Study of Some Psychological and Social Factors as related to Vocational Aspirations of Rural and Urban High School Children*, Ph.D. Psy., Pan. U., 1979

The major hypotheses of the study were: (i) There are significant differences in the fields and levels of vocational aspirations of urban and rural subjects. (ii) The levels of vocational aspirations of urban and rural sons are different from those of the aspirations of fathers for them. (iii) The subjects aspiring for higher levels of occupations have higher intelligence, need achievement and SES. (iv) There are differences in the levels of vocational aspirations of the subjects scoring high and low on

adjustment variables. (v) There are no significant differences in the scores on reactions to frustration obtained by those who aspire for either high or low levels of occupations.

The sample of the study comprised 713 boys of Class X, selected randomly from four schools of Chandigarh city and the six rural schools of Rupar district (Punjab). The tools used for collecting data were Group Test of General Mental Ability (Jalota), Thematic Apperception Test (Mehta) SES Scale (Dhami and Dosajh), Adjustment Inventory for School Students (Sinha and Singh), Rosenzweig Picture Frustration Study Test—Adult Form (adaptation by Pareek, Devi and Rosenzweig) and Vocational Aspiration Blanks developed by the researcher based on Roe's pattern. Statistical techniques of mean, SD, t-test, correlation matrices and elementary linkage analysis were used for analysing the data.

The major findings of the study were: (i) The urban boys aspired for engineering (48 per cent), protective (11 per cent) and health (10 per cent), occupations whereas the rural boys aspired for teaching, welfare (43 per cent), and engineering (36 per cent) vocations. Other fields were represented by less than 10 per cent each, both in the urban and the rural samples. (ii) The aspirations of fathers for their sons maintained more or less a similar rank order. (iii) Vocations related to health were less popular as only 6 to 12 per cent boys and their fathers aspired for them. (iv) The agreement between fathers and sons' vocational aspirations was found to be 64 and 47 per cent respectively, for urban and rural samples when only the fields were considered. More or less a similar agreement was found when only the levels were taken into account. (v) Intelligence and SES were positively and significantly related to the levels of aspirations of fathers and sons of both urban and rural samples. (vi) In the rural sample social adjustment and levels of the sons' aspirations were significantly correlated. (vii) The urban fathers' aspirations were related to the need achievement and need persistence of their sons. (viii) The adjustments of realistic and unrealistic vocational aspirants were not significantly different. (ix) In the case of vocational aspirations of sons and fathers, no field-wise consistent pattern could be identified in either of the samples.

623. CHAND, H., *Correlates of Vocational Maturity*, Ph.D. Edu., Pan. U., 1979

The major hypotheses of the study were: (i) Positive

and significant correlation existed between intelligence and measures of vocational maturity of adolescents. (ii) Sex, grade-to-grade and urban-rural background differences existed in relation to vocational maturity. (iii) Self-concept, socio-economic status (SES), academic achievement and personality characteristics of adolescents were correlates of vocational maturity. (iv) In multivariate analysis, different factors combined in specific constellations to yield a global picture of correlates of vocational maturity.

The sample of the study included 480 boys and girls of Classes VIII, IX and X of urban and rural schools of Chandigarh (U.T.). It was collected on the basis of randomization. For data collection, Career Maturity Inventory (CMI), Competence Test and Vocational Attitude Scale, prepared and standardized by the investigator, Hindi version of Cattell's 16 PF Social Class Scale, Raven's Standard Progressive Matrices, percentage of scores of the previous final examination, and Deo's Personality Word List were used. Descriptive statistics, namely, mean, median, standard deviation, skewness and kurtosis were worked out to ascertain the nature of score distributions pertaining to each variable under consideration. Multivariate analysis involving Hotelling's Principal Axes method of factorial analysis, varimax method of rotation of factors, product moment correlation and t-ratios were also used for different purposes.

The major findings were: (i) Positive and significant correlation existed between intelligence and vocational maturity of adolescents. (ii) There was a consistent increase in the mean performance of students from lower to higher grades on all the measures of vocational maturity. (iii) Sex differences and rural/urban background differences were not significantly related to vocational maturity of the students. (iv) Self-concept of the adolescents and SES in terms of education of parents, occupation and income of father, and total income of the family from all sources proved to be very important correlates of vocational maturity of adolescents. (v) Academic achievement of students was also directly related to their vocational maturity. (vi) Only some personality factors such as Factor B (more intelligent/less intelligent), Factor C (emotionally mature/emotional), Factor O (anxious/self-assured), Factor O₂ (self-sufficient/group dependent), and Factor O₃ (high self-control/low self-control) correlated with specific measures of vocational maturity. All the factors of personality, therefore, could not be considered to be correlates of each and every measure of vocational maturity. (vii) Factorial analysis revealed that a group of general factors of vocational

maturity as evidenced by factors (unrotated and rotated), existed.

624. CHATTERJEE, S., MUKHERJEE, M. and MITRA, S.K., *Higher Secondary Science Achievement as related to Scientific Interest and Aptitude*, ISI, Calcutta, 1978

The investigation aimed at finding out the effect of scientific interest at different levels of potential ability with respect to science and to study the predictive values of interest in science and scientific aptitude in predicting success in higher secondary science.

The sample consisted of 115 students studying in Class IX in three different schools in Calcutta, selected at random from Bengali-medium higher secondary boys' schools and with ages ranging from 15 to 17 years. The tools used were Scientific Knowledge and Aptitude Test (SKA) and Chatterjee Non-Language Preference Record (CNPR). Product moment coefficient of correlation and multiple regression analysis were the statistical techniques used for analysing the data. The students were classified into three groups on the basis of their scores on SKA. They were further classified into groups according to three levels of scores on CNPR.

The major findings were: (i) There was systematic positive relationship between science interest and probabilities of success in science at different aptitude levels except in the highest aptitude level. (ii) The relationship between aptitude in science and probabilities of success in science and achievement in science was positive. (iii) At the lower level of aptitude, interest played an important role in enhancing the probability of success in science. (iv) The product moment coefficient of correlation between the scores on CNPR and SKA was found to be 0.14, that between CNPR and higher secondary examination marks was found to be 0.36 and that between SKA and higher secondary examination marks was 0.51. (v) The multiple correlation with marks in the higher secondary examination as the criterion was 0.59 by adding interest score (with proper weightage) to the aptitude scores. (vi) The prediction of achievement in science was significantly improved by considering the scores in scientific scale in CNPR along with the scientific aptitude score.

625. CHATTERJEE, S., MUKHERJEE, M. and MITRA, S.K., *Relation between Certain Biographical Aspects, Aptitude and Achievement in*

Technical Stream—an Experimental Investigation, Psychometric Research and Service Unit, ISI, Calcutta, 1972

The major objectives of the study were: (i) to investigate the relationship between some biographical factors and success in the technical stream at the higher secondary level, and (ii) to investigate the relationship observed among the biographical factors and certain aptitudes which were expected to be associated with success in the technical stream.

In all, fifty-two and thirty-three students reading in Class X and Class XI, respectively, in the technical stream in three different schools in Calcutta were selected. Mechanical Aptitude Test, Paper Form Board Test, Mathematical Knowledge and Aptitude Test and Scientific Knowledge and Aptitude Test were administered on the selected sample. Two sets of achievement scores were collected from the concerned schools. Biographical information was collected through a questionnaire in which some of the questions were related to facts of everyday observation about mechanical things. The students were divided into different groups on the basis of their responses to each of the biographical questions. The mean values of the aptitude test scores and also those for the school examination marks were calculated separately for each group. The differences in mean values for the corresponding groups were tested by t-test. The relationship among different biographical factors, academic achievement and aptitude scores was further investigated by calculating biserial correlation coefficients.

The findings of the study were: (i) There was a high degree of correlation between biographical factors and achievement in and aptitude for technical stream, which strongly supported the use of biographical factors in predicting academic achievement in technical stream. (ii) Students with less number of brothers and sisters did better in school examinations than students having a larger number of siblings. The boys who liked play-involving intellectual activity and who used to spend time in indoor activities also achieved better than the other children. (iii) The children who spent their leisure time in both indoor and outdoor activities had the highest mean scores for all the three aptitude tests. Generally, the boys who liked to read serious types of books had higher mean scores in all the three aptitude tests.

626. DANDAPANI, S., *A Study of the Effect of a Group Guidance Programme upon the Academic*

Achievement of High School Underachievers,
Ph.D. Edu., Mys. U., 1976

The study was undertaken with the objectives: (i) to find out the effectiveness of a programme of group guidance and academic counselling on academic achievement among high school underachievers in comparison to control groups of non-counselled underachievers and normal achievers, and (ii) to examine the relative effectiveness of the programme on underachievers belonging to families of professional class, merchant class and clerical class groups.

The sample was drawn from 680 boys studying in Standard X, English medium, of twelve high schools in Mysore city. Ninety out of 680 boys were identified as underachievers. A random sample of thirty underachievers constituted the experimental group. Another thirty randomly selected underachievers and thirty normal achievers formed the control groups.

A pretest-posttest control group design was used. For deriving an index of mental abilities the Group Test of Scholastic Abilities (GTSA-verbal) standardized by the State Bureau of Educational and Vocational Guidance, Bangalore, was used along with a battery of academic achievement tests in general mathematics, general science and social studies, prepared by the investigator, for Standards IX and X for pretest and posttest, respectively. The treatment groups were formed on the basis of students' mental abilities and academic achievement. The experimental treatment consisted of counselling sessions in each school for underachievers in the experimental group. Profiles of some eminent men from different fields were used to stimulate interest among the underachievers, arouse a desire for emulation and develop ego-strength and raise their level of aspiration. Ten interviews were held with the underachievers in succession with a time gap of fifteen days. A post-test in academic achievement was administered to all the groups.

The major findings of the study were: (i) Academic achievement of the counselled underachievers was significantly greater than that of non-counselled underachievers. (ii) The academic achievement of the counselled underachievers was significantly greater than that of the non-counselled normal achievers. (iii) There was no difference in the academic achievement of the non-counselled underachievers and non-counselled normal achievers. (iv) There was no difference in the academic achievement of underachievers of merchant class and clerical class families; the underachievers of professional class families differed significantly from the other two groups.

***627.** DASTIDAR, P.K.G., *An Analysis of Examination Anxiety among High School Students and Evaluation of a Group Counselling Method Employed to Reduce It*, Ph.D. Psy., Kashi Vidyapeeth, 1981

The main objectives of the study were: (i) to make a functional analysis of examination anxiety among high school students, (ii) to develop a small group counselling method to reduce examination anxiety, and (iii) to evaluate the effectiveness of the group counselling methods employed to reduce the examination anxiety.

The sample consisted of 200 high school students. Out of this, top 50 per cent on examination anxiety score were taken as high anxiety group and were further divided into two equivalent groups of fifty each as experimental and control groups. The tools used were Srivastava's Examination Anxiety Questionnaire, Sen's Study Habit Inventory and a semi-structured interview schedule. The study was conducted with a pretest-posttest control group design. The experimental group was given treatment on the basis of behavioural counselling technique developed by the investigator along with relaxation. The results were analysed by employing chi-square and t-test.

The main findings of the study were: (i) Functionally, examination anxiety was related to psychological, psychosomatic and religious-superstitious dimensions. (ii) The counselling techniques developed consisted of changing the stimulus environment, clue-strengthening, reinforcement, feedback and improving study efficiency related to what was studied, hours of study, time table, lecture and note-making, back papers, revision, how to spend the day before examination and the last night. (iii) Behavioural counselling with group relaxation therapy significantly reduced examination anxiety as compared to the control group. (iv) The mean examination anxiety scores of the control group increased significantly in posttest condition.

628. GAUTAM, R.P., *An Integrated Selection Test versus Pre-medical Achievement as a Criterion of Selection for Admission to MBBS Course*, Armed Forces Medical College, Pune, 1973

The main aim of the study was to make a comparative assessment of the Integrated Selection Test (IST) and pre-medical achievement in respect of their predictive validity.

The sample comprised 107 students out of the 120 ad-

mitted to the First MBBS at the Armed Forces Medical College, Pune, in 1969. The tools used were Integrated Selection Test consisting of psychological tests, interview and past performance in extra-curricular activities. The criterion of subsequent medical achievement consisted of the marks secured by a candidate at the First MBBS university examination. The pre-medical achievement consisted of marks secured by a candidate in physics, chemistry, biology and/or English in the pre-medical examination. Product moment coefficient of correlation was used for data analysis.

The major findings were: (i) Correlation between the IST and the subsequent achievement in the First MBBS university examination was not significant. The IST did not prove to be a good selection instrument as far as predicting success at the subsequent MBBS examination was concerned. (ii) The correlation coefficient between pre-medical achievement and the subsequent achievement at the First MBBS examination was positive and significant. The pre-medical achievement proved to be a better predictor of success at the subsequent First MBBS examination and therefore a better selection instrument. (iii) When the pre-medical achievement included scores in physics, chemistry, and biology only (excluding English), the value of the product moment coefficient of correlation increased slightly. This improved the predictive value of pre-medical achievement.

629. GEORGE, E.I., *Needs and Problems of High School and College Students*, Deptt. of Psy., Ker. U., 1968 (UGC-financed)

The study surveyed (i) the needs and problems of school and college students to find out their nature and extent, and (ii) to indicate the extent to which student personnel work was needed in meeting the different needs and solving the problems.

A problem checklist with 215 items, concerning ten areas, was used to collect data for the study. The sample was made up of 1,112 students of Standard X drawn from twelve schools in Trivandrum district giving proportional representation to boys and girls and urban and rural schools and 1,569 students of pre-degree and first year degree classes drawn from nine colleges from all over the State with proportional representation to boys and girls, urban and rural, and government and private colleges. Analysis was done separately for the two samples. The t-test and correlation were used to analyse the data.

The main conclusions of the study were: (i) There was

close correspondence between the problems and needs of school and college students. (ii) Highest frequencies of problems for both the samples were in financial, educational and vocational areas, study and study habits and personal and social areas. (iii) The area in which maximum help was sought was educational and vocational. (iv) More problems were cited and help sought by low socio-economic groups and rural pupils. (v) Girls had more problems than boys among school students and less problems among college students. (vi) School students received more help from all sources than college students. (vii) Among college students, arts group students had higher number of problems than science group students. (viii) The need for guidance services was brought out in the study even though the sample was not aware of guidance services. (ix) The main areas in which guidance was needed were educational and vocational.

630. GNANAMBAL, T.S., *Identification of Gifted Children*, Ph.D. Edu., Madras U., 1982

The objectives of the investigation were: (i) to find out the facts which were related to giftedness of children, (ii) to find out the effectiveness of teachers' opinion and standardized test in identifying the gifted children, (iii) to study the relationship of giftedness to social qualities, (iv) to study sex differences as related to giftedness, and (v) to study whether socio-economic status had any relationship with giftedness.

The variables studied were intelligence, creativity, academic achievement, anxiety, social qualities, sex and socio-economic status. The sample included 1,555 students (920 girls and 635 boys) of two boys' and two girls' schools, selected at random using the cluster sampling technique from the city of Madras. The tools used were Group Intelligence Tests – AH2 and AH3 by Hem, Watts and Simmonds, Creativity Test modelled on Minnesota Creative Thinking Tests of Paul Torrance and his colleagues, Taylor's Manifest Anxiety Scale and Socio-Economic Scale (Urban-Kuppuswamy). Descriptive statistics, chi-square test, t-test and Principal Component Analysis were used for data analysis and hypothesis verification.

The major findings were: (i) Component analysis yielded first two components accounting for 61-62 per cent of the total variance. (ii) The component analysis of the four factors, namely, IQ, creativity, achievement and anxiety, revealed positive correlation of the first principal component with creativity and negative correlation with the other characteristics, accounting for

49.29 per cent of the total variance. It further revealed positive correlation of the second component with all the four characteristics accounting for 33.33 per cent of the total variance. (iii) The principal components using individual cut-off scores identified about 10 per cent of the population as gifted. (iv) Giftedness was not found to be related to sex but was significantly related to the social qualities of the subjects and their socio-economic status. The gifted students were found to be superior to the non-gifted students in their social qualities. The percentage of the gifted students was more in Classes I and II of the socio-economic status whereas the percentage of non-gifted was more in Classes IV and V.

***631. JAISWAL, K.,** *A Study of Anxiety, Frustration and Adjustment Patterns of Girl Students at Graduation Level and Their Educational Implications*, Ph.D. Edu., Gor. U., 1980

The hypotheses tested in the study were: (i) There was difference in adjustment, frustration and educational attainment of girl students of high and low anxiety level. (ii) There was difference in anxiety, adjustment and educational achievement of highly frustrated and least frustrated girl students. (iii) There was difference in anxiety, frustration and educational achievement of well-adjusted and maladjusted girl students. (iv) There was difference in anxiety, frustration and adjustment of married and unmarried girl students at the graduation level.

Five hundred girl students (464 of literary group and 36 of science group) were selected by the stratified random sampling technique from ten institutions of five districts of Eastern U.P. Statistical techniques used in the study were mean, standard deviation, percentile, correlation and critical ratio.

Important findings of the study were: (i) The educational achievement of low anxiety group of students was highest. (ii) There was no significant relationship between frustration level and educational achievement. (iii) There was a significant relationship between adjustment and anxiety, and frustration. However, there was no significant difference in the achievement of well-adjusted and maladjusted students. (iv) Science students had more anxiety and more adjustment ability. (v) There was no significant relationship between marital status of girl students, on the one hand, and anxiety, frustration and adjustment, on the other.

632. JOHN, P. and ABRAHAM, M., *A Study of*

Under-achievement among College Students with a view to Formulating a Guidance Profile, Dept. of Edu., Ker. U., 1981 (UGC-financed)

The main objectives of the study were: (i) to identify the non-intellective variables which differentiate achieving and under-achieving college students, and (ii) to prepare a profile of the under-achievers to help in drawing up guidance programmes for raising the level of achievement of under-achieving college students.

The variables studied were regularity of habits, optimism-pessimism, anxiety (freedom from), rigidity-flexibility, perception of reality, mastery of environment, sociopathic tendency (freedom from), emotional maturity, goal perception, delayed gratification, self-effort vs fatalism, attitude towards college, attitude towards optional subjects, attitude towards teachers, attitude towards academic work and attitude towards parental authority. The first eight variables were measured by available rating scales while separate scales were prepared for the remaining variables. The total sample for the study was 868 college students, of whom 616 were pre-degree students and 254 degree students. The number of boys in the sample was 455 and of girls 413. The achievers and under-achievers were classified by applying regression techniques by which 224 under-achievers and 644 achievers were identified. Achievers and under-achievers were compared for each of the variables by testing the significance of the differences between the means. Percentage differences between relevant sub-groups were also tested.

The seven variables which differentiated significantly between achievers and non-achievers were: (i) Optimism-pessimism, (ii) Goal perception, (iii) Delayed gratification, (iv) Self-effort vs Fatalism, (v) Attitude towards optional subjects, (vi) Attitude towards teachers, and (vii) Attitude towards academic work.

633. JOSHI, R.S., *Study of Mental Health Movement in Education and Its Implications for Secondary Schools in Greater Bombay*, Ph.D. Edu., Bom. U., 1979

The main objectives of the investigation were: (i) to give a retrospect of the community's changing attitude to mental health, (ii) to describe the mental health movement abroad and in India, (iii) to study the current concepts of mental health, (iv) to study the mental health movement in education, abroad and in India, and its implications for secondary schools

as well as for the professional courses preparing personnel for secondary schools, (v) to make a survey of the existing conditions in secondary schools in Greater Bombay, so far as the behaviour problems of pupils and the availability of mental health facilities were concerned, (vi) to elicit and estimate opinions of the heads of secondary schools in Greater Bombay and also of the professionals in the field of mental health about the measures that could be undertaken to check the behaviour problems of pupils and to provide better mental health facilities in secondary schools, and (vii) to present these measures in the form of concrete proposals.

The method of library research and documentary analysis was used for the historical retrospect of the mental health movement. The descriptive survey method was employed for studying the present position of mental health facilities in secondary schools in Greater Bombay. The tools employed were questionnaire, interview, observation, visits and correspondence.

The main conclusions of the study were: (i) The mental health movement in Greater Bombay began with the efforts made for juvenile correction by the Society for the Protection of Children in Western India. (ii) Radical differences in the socio-economic and socio-cultural conditions aggravated mental health problems in the Indian society. (iii) Contributions to the mental health movement in education were from various disciplines and sources such as psychoanalysis, psychotherapy, social psychology and the child study movement. (iv) Once mental health is regarded as one of the aims of education, the attitude of teachers to their profession and consequently to their pupils becomes important. (v) The mental health movement in education in the Indian context, in general, and Greater Bombay, in particular, could be divided into three periods — the period of awareness (1937-55), the period of orientation (1956-65) and the period of expansion (1966 onwards) (vi) The unprecedented demand for quantitative expansion of educational facilities made planners and administrators reluctant to spend on guidance services. (vii) Only about 1 per cent of the teachers in the secondary schools surveyed had studied mental hygiene as an optional subject for the M.Ed. examination while 6 per cent had studied child guidance as an optional subject for the B.Ed. examination. (viii) Eighty-six per cent of the headmasters thought it necessary to have a working knowledge of mental health themselves. (ix) Behaviour problems of children were on the increase. (x) Sec-

ondary schools did not have any significant connection with Remand Homes. (xi) There was need for more frequent and more effective collaboration between parents and schools. (xii) Only 15 per cent of the schools took the help of specialized agencies in respect of mental health facilities.

***634. KHATTARI, S.,** *A Comparison of Behavioural Strategies for Reducing Examination Anxiety in Girls*, Ph.D. Psy., Kashi Vidyapeeth, 1982

The main objectives of the study were: (i) to find out the efficiency of group relaxation, group counselling and group desensitization behavioural strategies for reducing examination anxiety in girl students, and (ii) to find out the relative efficacy of the above three strategies in reducing examination anxiety among girls.

Initially, the sample consisted of 400 graduate female students from different girls' colleges and universities of Varanasi. The mean age of the sample was 20.58 years. On the basis of examination anxiety test the top 25 per cent of the total sample was selected as high anxiety group and this group was again divided randomly into four groups consisting of twenty-five subjects each. Three groups acted as experimental groups and one as the control group. The study adopted a pre-posttest control group design. The tool used for the study was Srivastava's Examination Anxiety Questionnaire. Techniques used for reducing examination anxiety were group relaxation technique, group counselling technique and group systematic desensitization technique. F-ratio and t-test were employed for analysing the data.

The major findings of the study were: (i) The group relaxation technique showed a significant reduction in examination anxiety as compared to the control group. (ii) The group counselling technique showed a significant reduction in examination anxiety as compared to the control group. (iii) The group systematic desensitization technique also showed a significant reduction in examination anxiety as compared to the control group. (iv) The systematic desensitization technique was found significantly more effective in reducing examination anxiety than the other two techniques. (v) There was no significant difference in the efficacy of the group relaxation technique and the group counselling technique.

635. MISHRA, C.P., *A Study of Educational Back-*

wardness in Science and Mathematics at Delta Level in Varanasi District, Ph.D. Psy., BHU, 1977

The objectives of the investigation were: (f) to study the extent and nature of educational backwardness in science and mathematics among the students of Class VIII, (ii) to find out the differences between the attainment in science and mathematics of Class VIII students on the basis of urban and rural areas and boys and girls, (iii) to locate the factors that operated together or singly in causing educational backwardness, and (iv) to find out how far a lower level of intelligence accounted for educational backwardness and what extraneous factors were responsible for it.

A sample of 1,060 Class VIII students was randomly drawn from seventeen institutions of Varanasi district to represent both the sexes and rural/urban institutions. The tools used in the study were an achievement test of science, an achievement test of mathematics, and a test of general intelligence. In addition to these standardized tools the researcher prepared a Teachers' Opinion Form, Students' Self Inventory and Teachers' Information Blank. The data were analysed by employing percentage, mean, standard deviation, critical ratio and product moment correlation.

The findings were: (i) In all, 23.58 per cent students were educationally backward in science and mathematics. Out of the total backward cases 63.8 per cent showed marked deficiency in one subject and 36.8 per cent showed backwardness in both the subjects. (ii) The general level of achievement in mathematics was almost the same among boys and girls both in urban and rural areas; however, backwardness in science was more marked in the rural areas than in the urban. (iii) Inferior intellectual potentiality was the most important cause of educational backwardness. The percentage of dull and mentally deficient was 54.4 and 17.2, respectively. (iv) Differences in percentage of attainment, sex-wise and rural/urban area-wise, were not statistically significant. (v) Socio-economic factors were associated with educational attainment. Educational attainment was significantly negatively related to the family size ($r = -0.44$), positively with parental education ($r = 0.45$) and hierarchy of father's occupation ($r = 0.48$). (vi) Various factors affecting students' attainment were clubbed into different clusters. The first cluster represented low ability and negative attitude towards studies.

***636.** MISHRA, O., *Behaviour Patterns of Stars and Isolates among School-going Adolescents, Ph.D. Edu., Gor. U., 1981*

The objectives of the study were: (i) to determine the behaviour patterns of stars and isolates among school-going adolescents, (ii) to make a comparative study of the behaviour patterns of stars and isolates among school-going adolescents, and (iii) to ascertain the role of such factors as intelligence, interest, adjustment, personality type (introversion-extroversion), socio-economic status and scholastic attainments in determining the behaviour patterns of stars and isolates among school-going adolescents.

A total of 531 boys of fifteen sections of five institutions and 552 girls of thirteen sections of five institutions of Gorakhpur City were selected by the random cluster sampling technique. Out of these 1,083 students of both sexes, thirty-two stars, thirty-two rejectees and thirty-two isolates were chosen. Mean, standard deviation and two-way analysis of variance were the statistical techniques used.

The findings of the study were: (i) The behaviour in social area was most important in the selection of stars and rejectees of both sexes but for isolates it mattered little. (ii) Lack of many qualities of mental area was prominent in the rejection of boys and girls. (iii) The educational area was more prominent in personality construct of isolates but it mattered comparatively less in the forming of personality of stars and rejectees. (iv) Behaviour based on temperament contributed considerably in the selection of all the groups of both the sexes but was more prominent among the isolates. (v) The physical area contributed more in the selection of stars but was not so prominent in the selection or rejection ground for rejectees and isolates. (vi) The behaviour in ethical area was more valuable in all the groups of girl students than that of boys.

637. NIRMAL KANTA, *A Comparative Study of Study Habits of High School Students, Ph.D. Psy., BHU, 1979*

The investigation was conducted: (i) to find out the relationship of study habits with scholastic performance, (ii) to find out the contribution of various measures of study habits to success in scholastic performance in different school subjects, (iii) to find out the variation in study habits with age, sex and urban or rural area, and (iv) to examine the study

habits in relation to the level of parental education, parental occupation and family income. The hypotheses formulated with regard to these variables were: (i) Scholastic performance in various school subjects is positively related with study habits but the measure of relationship varies from subject to subject. (ii) Students of arts, science and commerce vary in their study habits. (iii) Success in scholastic performance in different school subjects needs different aspects of study habits. (iv) The various measures of study habits have an organizational pattern. (v) Study habits tend to improve with age. (vi) Rural and urban students as well as boys and girls differ significantly in their study habits.

A representative sample of 2,966 students of Classes IX and X was drawn by employing the random sampling technique from different schools situated in rural and urban areas of Varanasi district. The sample was further categorized into arts, science and commerce groups. For measuring the study habits Study Habit Inventory (Joshi and Pandey) which is an adaptation of Brown Holtzman's Survey of Study Habits and Attitudes was used. Scholastic performance had been estimated on the criteria of examination marks and teachers' rating. The data were analysed by employing product moment coefficient of correlation, cluster analysis and critical ratios.

The findings of the study were: (i) Scholastic performance in various school subjects had low but positive relationship with study habits. (ii) Science group students scored higher on the study habit test, elements A (amount of time for study), B (assignment habit), E (method of study), and F (method of answering examination papers) than their counterparts in arts and commerce groups. (iii) Arts group students scored significantly higher than the other groups on study habit test, elements C (attitude towards study) and D (concentration). (iv) Different test elements of study habits were found effective in the scholastic performance of different school subjects. (v) The various test elements of study habit were interrelated. (vi) Cluster analysis showed two clusters in order of E, C, F, and A, B, D, respectively. (vii) Students of Class X scored significantly higher on the Study Habit Inventory than those of Class IX. (viii) Girls scored higher on Study Habit Inventory. (ix) Urban boys showed significantly higher scores on study habits than rural boys but there was no significant difference between the study habits of urban and rural girls. (x) The level of parental education favoured the study habit scores of students. (xi) The children of service

class fathers had more effective study habits but the children of service class mothers had shown low level of study habits; the children with mothers as housewives had more effective study habits. (xii) The family income was positively correlated with the study habit scores.

638. PANDEY, M.M., *Mathematical Aptitude in relation to Intelligence and Academic Achievement among the Rural and Urban Secondary School Students of Bihar*, Ph.D. Edu., Pat. U., 1980

The main objectives of the study were to find out: (i) the nature of distribution of mathematical aptitudes among the urban and rural boys and girls of Bihar, (ii) the sex difference in mathematical aptitude among the secondary school students, (iii) the urban-rural difference in mathematical aptitude among boys and girls studying in the secondary schools, (iv) the relationship between mathematical aptitude and verbal intelligence, (v) the relationship between mathematical aptitude and non-verbal intelligence, (vi) the relationship between mathematical aptitude and achievement in elementary and advanced mathematics, (vii) the relationship between mathematical aptitude and general scholastic achievement, and (viii) to construct and standardize a mathematical aptitude test for secondary school students of Bihar.

The sample consisted of 1,900 boys and girls, studying in Classes IX and X (new) of the secondary schools of Bihar. The tools used were the newly constructed and standardized test of mathematical aptitude by the investigator, mixed type group test of intelligence (verbal and non-verbal), and school examination marks in elementary and advanced mathematics and aggregate marks as indices of mathematical and general scholastic achievement, respectively.

The major findings of the study were: (i) The distribution of mathematical aptitude test scores of secondary school boys and girls was almost normally distributed. (ii) The urban boys scored significantly higher on mathematical aptitude test than the urban girls. (iii) The rural boys scored significantly higher than the rural girls. (iv) The urban boys showed superiority over all other groups in mathematical aptitude. (v) The rural girls scored lowest on the mathematical aptitude test. (vi) There were significant urban-rural differences in mathematical aptitude, the urban boys scoring significantly higher. (vii) The

urban girls were superior in mathematical aptitude than their counterparts in rural areas. (viii) The urban students (boys or girls) were superior in mathematical aptitude in comparison to the rural students. (ix) Mathematical aptitude was found to be significantly positively correlated with verbal intelligence in all the four groups. (x) Mathematical aptitude had positive but low correlation with non-verbal intelligence of all the four groups. (xi) Verbal intelligence test scores had a higher correlation with mathematical aptitude scores than the non-verbal intelligence test scores. (xii) Mathematical aptitude test scores had significant correlation with the examination marks in elementary mathematics. (xiii) Mathematical aptitude test was significantly positively correlated with the general scholastic achievement as measured by school examinations in terms of the aggregate marks.

*639. PATEL, G.K., *An Investigation to Study the Extent and Patterns of Frustration of Adolescent Pupils of Secondary Schools of Ahmedabad City with reference to Demographic Variables*, Ph.D. Edu., SPU, 1983

The major objectives of the investigation were: (i) to meet the need for a device to measure frustration, (ii) to help workers in the field of guidance and counselling in assisting adolescent pupils, and (iii) to study the extent and patterns of frustration of adolescent pupils of the secondary schools of Ahmedabad City with reference to sex, the size of the family, birth order, socio-economic status, school and age.

The study was divided into two main parts. The first part was devoted to the construction and standardization of frustration inventory. The final sample for trying out the final form of the inventory was 5,382. The inventory consisted of items, spread over six patterns of frustration. The sex norms, grade norms, PRs and stanine (pattern-wise) were reported. The reliability of the inventory varied from 0.74 to 0.86, and the validity from 0.66 to 0.75. The second part was devoted to the detailed studies of frustration with reference to demographic variables. A purposive sample of 480 adolescent pupils had been considered keeping in view the family size, birth order, sex and school. A $2 \times 2 \times 2 \times 3$ design was prepared. The data were analysed using analysis of variance and trend analysis techniques.

The findings of the study were: (i) The extent and patterns of frustration were found to be independent.

(ii) There was no significant difference in the main scores of frustration of adolescent pupils from small families and large families. (iii) The pupils of secondary schools were more frustrated than those of higher secondary schools. (iv) There were no sex differences as far as frustration scores were concerned. (v) The birth order did not play any role in bringing about frustration. (vi) The family size, sex and birth order together influenced the frustration scores of pupils. (vii) There was no trend, either linear or quadratic, in frustration scores of pupils of different ages in the context of socio-economic status.

640. PAUL, A., *A Study of Certain Motivational Aspects of Goal Behaviour of Students in the Vocational and Academic Spectrums of the Higher Secondary Pattern of Schooling*, Ph.D. Edu., Madras U., 1981

The main objective of the study was to find out the educational and psychological factors influencing the goal behaviour of students in the higher secondary schools. Goal behaviour was studied with reference to goal perception, school goal relevance, goal phantasy, goal locus of control, goal risk and goal aspiration.

The investigator developed tools for measuring school goal relevance, goal phantasy and goal risk. Goal locus of control was measured by ten items selected from Crandell's IAR Scale and goal aspiration by using Rotter's Level of Aspiration Board. The school examination marks in the elective subjects for the students of Standard XI and the public examination marks for the students of Standard XII were considered measures of scholastic achievement. A sample of 495 boys studying in Standards XI and XII in higher secondary schools in and around Madras was selected adopting the stratified random sampling technique. The sample consisted of 271 students from the academic spectrum (167 from the humanities and 104 from science groups) and 224 students from the vocational spectrum (86 from agricultural, 75 from engineering and 63 from commerce groups). The data were analysed using F-test, t-test, correlation coefficients and multiple regression analysis.

The major findings of the study were: (i) The vocational spectrum students had significantly higher mean scores in goal aspiration, goal perception, goal locus of control and in scholastic achievement. (ii) The academic spectrum students had significantly higher mean score in goal risk behaviour. (iii) In

goal perception, school goal relevance and goal phantasy the two groups did not differ significantly. (iv) In the academic spectrum, the humanities and science group students significantly differed in the perception of future goals, school goal relevance, goal phantasy and goal locus of control, the science group being at a higher level. (v) In the vocational spectrum, the engineering students differed in their goal perception from the commerce students, in their goal phantasy from both the commerce and the agricultural students, and in scholastic achievement from the commerce students. (vi) The six goal related variables jointly explained 31.4 per cent of the variance in the scholastic achievement of students in the academic spectrum and 73.1 per cent of the variance in the achievement of students in the vocational spectrum.

641. PILLAI, G.P., *Intelligence as a Determinant of Occupational Aspiration of High School Students*, Dept. of Psy., Ker. U., 1977

The study aimed at finding out the influence of intelligence on the occupational aspirations of students of Class X.

The sample comprised 1,899 students (984 boys, 915 girls) of Class X drawn from twenty-one secondary schools selected out of seventy-two secondary schools of Trivandrum educational district representing, proportionately, urban and rural schools and boys', girls' and co-educational institutions. The tools used were an intelligence test in Malayalam developed and standardized in the department of psychology of Kerala University, and a personal data questionnaire to collect information about occupational aspirations of students. Analysis of variance and t-test were used for data analysis.

The major findings of the study were: (i) Three groups of students, viz., those who aspired for professional and semi-professional occupations (H), those who aspired for white-collar jobs and clerical occupations (M) and those aspiring to enter semi-skilled or unskilled occupations (L) differed significantly in their intelligence scores. This was true for boys as well as for girls. (ii) The mean intelligence score for Group H was maximum and for Group L minimum for boys and girls. (iii) Intellectually superior children aspired for higher level occupations and those whose intellectual capacity was low aspired only for lower level occupations.

642. RAO, S.N., *The Scores of MPFB Test in relation to Performance in Engineering Courses at Different Levels*, SVU, 1977

The objective of the investigation was to examine the feasibility of using the MPFB test scores in the selection of students for admission to the engineering course and to further examine if they were related to students' performance in engineering courses.

The sample comprised 220 students of the three years of Junior Technical Schools, 900 students of civil engineering and mechanical engineering courses of three polytechnics and 924 students of B.E. courses of two engineering colleges. The tools used were Forms AA and BS of the MPFB test, and Raven's Standard Progressive Matrices. Scholastic performance scores were obtained from examination records. Product moment correlations were used for data analysis.

The major findings of the investigation were: (i) There was a progressive increase in the performance of the subjects on MPFB depending upon their engineering course grade. The B.E. students scored higher than the polytechnic students who, in turn, scored higher than the students of junior technical schools. (ii) The scores on the MPFB test were found to be positively related with the scores on Raven's Standard Progressive Matrices and with the academic achievement. (iii) The MPFB test could be used with advantage for counselling students seeking admission to different engineering courses and trade schools.

643. REDDY, A.V.R., *A Study of the Vocational Needs of Secondary School Pupils (Boys) in relation to Their Occupational Choices and Their Variables*, Ph.D. Psy., SVU, 1972

The main purpose of the investigation was to study the vocational needs of male pupils at the terminal stage of secondary education in relation to their occupational choices and other variables like locality, the length of schooling, general mental ability and familial variables such as the socio-economic background of the family and parents' occupational and educational status.

An adaptation of the Vocational Needs Inventory of Rao was used to collect data from 3,600 pupils belonging to Classes IX, X and XI distributed evenly among four localities. The Standard Progressive Matrices, a paired comparison instrument with seventeen vocational needs and a questionnaire to elicit information regarding the family background, occupational and educational status

of both the parents, etc., were administered to the subjects.

The major findings of the investigation were: (i) The subjects hailing from different localities did not differ on the vocational needs, power, activity, moral values, responsibility, satisfaction, advancement, human relations (co-workers), service and creativity (self-expression). (ii) The subjects from different grades/classes were found to attach significantly different values to the satisfaction of the vocational needs, suitability, prestige (esteem), activity, moral values, responsibility, recognition (fame), satisfaction, creativity (self-expression) and independence on the occupations they selected. (iii) There was a significant interaction between locality and grade/class on the vocational needs, variety, suitability, prestige (esteem), recognition (fame), advancement, human relations (co-workers) and service. (iv) There was a significant difference between the vocational needs scores of high mental ability and low mental ability groups of subjects on the vocational needs, working conditions, monetary returns, job security, variety, suitability, activity, moral values, recognition (fame), advancement and independence. (v) The economic background of the family was found to be significantly related to the value the subjects attached to the satisfaction of some of the vocational needs in the occupations they selected. (vi) The social status of the family was significantly related to a few of the vocational needs of the adolescent boys. (vii) The children whose mothers had different levels of schooling differed on the vocational needs, variety, human relations (co-workers) and service. (viii) The occupational choices of the subjects were found significantly related to their social status, irrespective of their grade/class or locality differences. (ix) A disproportionately large number of subjects were desirous of entering the medical field.

644. ROY, B., *A Study of Some of the Social-Psychological Factors associated with Vocational Development*, Ph.D. Psy., IIT, New Delhi, 1978

The hypotheses of the study were: (i) Increase in educational status increases vocational development. The tentative, transition and trial stages show a gradual increase in the vocational development index. (ii) The background variables have no relationship with the vocational development index. (iii) The social variables have positive relationship with the vocational development and distinguish within their own levels and between the vocational development for all the three types

of students. (iv) All the psychological variables have positive relationship with the vocational development for all the three educational status levels. (v) The factors responsible for vocational development (as obtained through the vocational development inventory) have high positive correlations with the vocational development index.

A sample of 639 students — 222 students from schools, 213 from colleges and 204 from a university — was selected through the stratified quota sampling technique from the Union Territory of Delhi. The social variables were controlled for sampling purposes with the help of a $2 \times 2 \times 3$ factorial design. Data were collected from the 639 students on all the background, social and psychological variables. Twenty-six variables were considered, the last being the criterion variable, i.e., the vocational development index, other 25 variables included the background, social and psychological variables. In the study attitude towards education was measured by a 22-item Likert-type five-point scale originally developed by Rundquist and Sletto having corrected split-half reliabilities of 0.82 and 0.83 and test-retest reliabilities for males and females, respectively. A high score indicated positive attitude towards the value of education. The vocational development inventory specially prepared by the investigator consisted of twenty-six items and Likert-type five-point scaling, based on six factors, was used as a vocational development index. The inventory had split-half reliabilities of 0.889 and 0.894 for odd-even and first half vs last half, respectively. Socialization Scale by Edwards had thirty-nine items covering such areas as self-anxiety, conformity in controlling aggression, achievement striving, tolerance of frustration, compulsiveness and unconventionality. Characteristics preferred by parents questionnaire (CPP Questionnaire), developed by Mishra, contained seventeen pairs of statements, each having two opposite characteristics. The data were analysed with the help of ANOVA factorial design.

The major findings of the study were: (i) There was a gradual increase in the mean vocational development index with the increase in educational status. (ii) Out of the five background variables, only the academic achievement had positive and significant correlation with the vocational development index. (iii) Among the three social variables only the socio-economic status variable was positively and significantly related to the vocational development index. Within the levels, the socio-economic status variable distinguished itself significantly among all types of students. It was confined to college students only for religious affiliation and residential

status, whereas in the case of school students the distinctions were very high on religious affiliation only. (iv) Among the psychological variables, only the attitude toward education and the six factors in the vocational development inventory were positively and significantly correlated with vocational development index for all the three types of students. As regards socialization, opposite trends were noticed in the case of school (positive and significant) and university (negative and significant) students.

645. SAHEB, S.J., *A Study of Academic and Non-academic Abilities in relation to the Vocational Interests of the Entrants to the +2 Stage of Schools in Tamilnadu*, Ph.D. Edu., MKU, 1980

The objectives of the study were: (i) to investigate the differences between the academic and the vocational stream students with respect to their academic abilities, non-academic abilities and vocational interests, (ii) to investigate the difference between the academic and the vocational stream students who have shown primary interest in the same areas with respect to their academic abilities and non-academic abilities, (iii) to investigate the interrelationships between the academic and the non-academic abilities in the case of the academic stream students and the vocational stream students, (iv) to investigate the inter-relationships between the success criterion variables, namely, the examination marks and teacher ratings and the academic abilities and non-academic abilities, and (v) to find out whether the socio-economic status of the students had any influence on the choice of stream.

The academic ability variables studied were vocabulary, verbal reasoning, numerical ability; and the variables of non-academic abilities were leadership, social service, arts, writing, dramatics, music, games and sports and science talents; the non-academic abilities were measured at three levels, namely, appreciation, participation and contribution. Vocational interests in ten spheres were considered. The success criteria were teachers' ratings, marks of the final examination of Standard X and quarterly marks. The sample of the study comprised 987 boys — 532 belonging to the academic stream and 455 to the vocational stream — of the English medium higher secondary schools in Tamil Nadu. The tools constructed and standardized for the study were the Academic Ability Test (AAT), Non-academic Ability Evaluation Questionnaire (NAAEQ) and an adapted version of Thurstone's Interest Schedule. The

statistical techniques used were t-test and chi-square and correlation.

The major findings of the study were: (i) The academic and the vocational stream students differed markedly in their academic abilities, the academic stream students being higher. (ii) As far as the non-academic abilities were concerned, the academic stream students were better in leadership, writing and science talent and the vocational stream students were better in social service, music and games and sports. (iii) The academic and the vocational stream students were quite different in their distribution of primary interests. Most of the academic students evinced primary interest in the areas of physical science and biological science whereas the vocational stream students indicated primary interest in the areas of business and computations. Students of both the streams showed equal interest in the musical area. (iv) Students of both the streams indicated marked differences in academic abilities, namely, vocabulary, verbal reasoning and numerical ability, irrespective of their area of primary interests. (v) Students of the academic stream who displayed primary interests in physical science and in being executives were high in their abilities of leadership, science talent and writing. Similarly, students of the vocational stream who displayed primary interest in computational, literary, humanitarian and musical areas were higher in their non-academic abilities like games and sports, social service and music. (vi) The success criterion variables, namely, quarterly marks, final marks and teacher ratings, were significantly related to the academic abilities but not to the non-academic abilities both in the case of the academic and the vocational stream students. (vii) The choice of the stream by the students was not dependent on their socio-economic status.

646. SENAPATI, B.B., *A Study of Interest and Ability of the Secondary School Students in Science*, Ph.D. Edu., Cal. U., 1980

The objectives of the study were: (i) to determine the exact nature of relationship between interest and ability, and (ii) to suggest some dependable criteria for guiding students in the science stream of the present school education.

The sample consisted of 207 students of age group 17+ chosen at random from among students of Class XI (science stream) of twelve randomly selected higher secondary schools in West Bengal. Data were collected with the help of Intelligence Test by Pal and Bose, the

Bengali adaptation of Strong Vocational Interest Blank by Deb, Scientific Aptitude Test by Ghosh and Achievement Test in physical science designed on the basis of questions used in the Higher Secondary Examination, 1975, of West Bengal Board of Secondary Education. The scores obtained by the subjects in physical science in the school annual examination as well as in the higher secondary final examination were also collected. Correlational methods were used in the analysis of data.

The finding that emerged from the study was that intelligence and interest taken together were a better predictor of achievement in science than interest or intelligence alone.

647. SHAH, B.C., *Placement of Arts and Home Science Students of SNTD Women's University in Vacation and Part-time Jobs*, SNTD, 1978

The main objectives of the study were: (i) to explore the scope for employment of the students of arts and home science faculties of SNTD Women's University in vacation and part-time jobs in the world of work of Greater Bombay, and (ii) to examine the employment plans of arts and home science students of SNTD Women's University for vacation and part-time jobs.

The scope for employment was explored in a sample of 121 industrial and business establishments. Data were collected by interviewing the concerned authorities in these establishments with the help of a specially designed interview schedule. Data regarding the second objective, namely, employment plans, were collected from all the first and second year undergraduate and first year postgraduate students studying in the arts and home science colleges of the Bombay campus. In all, data were collected from 1,396 students with the help of a comprehensive questionnaire.

The major findings of the study were: (i) Among the industrial establishments contacted, about 53 per cent had scope for employment of students. (ii) Female students taking higher education were preferred mainly for office work and field work. (iii) Officers-in-charge could not specify the number of students that could be absorbed on part-time or vacation jobs. They also could not state the period for which the students could be employed during the vacation. (iv) Specific vocational training was necessary for employment as stenographers, typists and telephone operators. Others could be employed as clerks, receptionists, field investigators, sales girls, etc. (v) Students who were proficient in English had better chances of being selected for employ-

ment. Those who were proficient in regional languages in addition to English were preferred for jobs involving field work. (vi) Those employed for field work were paid on daily basis while those in office work received salary on monthly basis. Sales girls could also earn commission in addition to their fixed salary. (vii) A high percentage of students intended to earn during the vacation and on part-time basis. (viii) Of those seeking part-time employment a large percentage could spare two to three hours per day and they preferred to work in the afternoon hours. (ix) Jobs preferred by students from arts faculty were job work at home, typing, clerical work, and telephone operation. Students from the home science faculty preferred job work at home, work in hospitals and tuition work. (x) Vocational training received by the students were mainly typing, sewing and fancy work, beauty care, telephone operation and stenography.

648. SHAH, B.C. and Others, *A Study of Guidance Needs to the Graduate and Graduating Students of Arts and Home Science Colleges of the SNTD Women's University in Bombay*, SNTD, 1977

The major objectives of the enquiry were: (i) to study the educational and vocational aspirations of the students of graduate and postgraduate classes of Arts and Home Science Colleges of the SNTD Women's University in Bombay, (ii) to study the relationship between the educational and vocational aspirations of the students, (iii) to survey their guidance needs, (iv) to locate the needs of students in relation to their entry into the world of work, (v) to know about the leisure time activities of students, and (vi) to study the experiences, of students who were employed and of those who had tried to seek employment. The tool used was a questionnaire consisting of thirty-seven items covering eight different aspects of the enquiry.

The major findings of the enquiry were: (i) Most of the students were engaged for marriage and consequently did not have any educational aspirations. Those who expressed a desire to study for personal development, selected academic subjects and professional courses also. (ii) The purpose of future educational pursuit had not crystallized in the case of most of the students. (iii) The intention to earn was higher in the case of students of the arts faculty. (iv) Teaching and clerical work were the chief careers aspired for by the arts and the home science students. (v) In the arts faculty, the highest percentage of students who desired to study further had offered Gujarati, followed by Hindi, sociology and economics.

In the home science faculty the highest percentage of students who wanted to study further had offered textiles and clothing followed by foods and nutrition, child development and general home science. (vi) In the arts faculty, the highest percentage of students aspiring to work had offered economics and similar students in home science faculty had offered textiles and clothing. (vii) The main areas where the students needed assistance were: (a) choice of courses and further studies and specialization, (b) occupational information, (c) assessment of their potentialities, and (d) information regarding sources of financial assistance. (viii) The main leisure-time activities of students were fancy work, reading and household activities. It was concluded that the exposure of the students to the world of work was very limited.

***649.** SHARMA, H., *An Investigation into the Influence of Age and Intelligence on the Problems Encountered by Adolescent Boys of Gorakhpur District*, Ph.D. Edu., Gor. U., 1978

The main objectives of the study were: (i) to estimate the influence of difference in the age and intelligence on the problems encountered by adolescent boys, (ii) to examine the interaction of age and intelligence on the problems encountered by boys, (iii) to analyse which of the age and intelligence groups felt the maximum and minimum number of problems, and (iv) to find out the areas in which adolescent boys felt the maximum and the minimum number of problems.

In all, 1,200 boys from ten intermediate colleges, which were selected randomly, constituted the sample for this study. A problem inventory designed for this study was used. Only 900 usable returns were found. Analysis of variance followed by t-test revealed that age and intelligence were significant determinants of adolescent boys' problems. Age difference was found to have significantly greater impact on the nature and type of problems encountered by the adolescent boys. Two or more than two years' difference in age was a potent factor governing the nature of problems. School and unemployment were two areas where these boys felt the maximum and the minimum number of problems, respectively. Intelligence level was associated with different types of problems. However, it did not play any role in physical and health problems.

***650.** SHASHI PRABHA, *Socio-economic Status and*

Occupational Values as the Determinant of Occupation Choices, Ph.D. Psy., Agra U., 1982

The main objectives of the study were: (i) to observe the determining effect of each of the three socio-economic statuses (upper, middle and lower) on the following occupational areas: literary, scientific, executive, commercial, constructive, artistic, agricultural persuasive, social, household, and (ii) to observe the determining effect of each of the occupational values (special abilities, economic returns, prestige and status, work with human beings, security, freedom, leadership, adventure, altruism) on each of the ten occupational areas.

The study was conducted on a sample of 760 adolescents (475 boys and 285 girls) of undergraduate and post-graduate classes. Three tools were used — Kulshrestha's Vocational Interest Record, the Morris-Rosenberg Scale of Occupational Values adapted and standardized to suit Indian children, Socio-Economic Status Questionnaire by Jalota, Pandey, Kapoor and Singh.

The findings of the study were: (i) The persons of lower socio-economic status group had the highest interest in literary job. (ii) Socio-economic status played an important role in determining executive jobs; the persons in low socio-economic status had the highest interest in executive jobs while the upper class persons had an average interest and middle class persons the least interest in executive jobs. (iii) Socio-economic status played a significant role in determining commercial jobs. (iv) Persons from lower socio-economic status had the highest interest in commercial area and the upper class had the least interest in constructive jobs. (v) Socio-economic status and choice of artistic job differed significantly; persons of lower socio-economic status had the highest interest in artistic jobs, middle class had an average interest and the upper class persons had the least interest. (vi) Socio-economic status and choice of agricultural jobs differed significantly. Those of low class had the highest degree of interest in agriculture while the upper class persons had the least interest in agricultural jobs. (vii) Socio-economic status played a significant role in determining interest in persuasive jobs. The low class people had the highest degree of interest in persuasive jobs, the middle class persons had an average degree of interest while the high class persons had the least interest in persuasive jobs. (viii) Socio-economic status played an important role in determining the social interest. Persons of lower socio-economic status had the highest degree of interest in social work, the middle class had an average degree of interest and the upper class had the least degree of interest in social work. (ix) Socio-

economic status and choice of household jobs differed significantly; upper class persons had the highest degree of interest in household jobs. The middle class persons had an average degree of interest and the low class persons had a low degree of interest in household jobs.

651. SHEJWAL, B.R., *Investigation into Study Habits of College Students*, Dept. of Expt. Psy., Poona U., 1980

The major objectives of the investigation were: (i) to identify the good and poor study habits of students, and (ii) to find out the difference, if any, between the study habits of boys and girls.

The sample comprised fifty boys and fifty girls residing in a hostel exclusively meant for the economically backward students from rural areas. The sample was drawn randomly out of the 360 boys and girls of the hostel. There were twelve boys and twelve girls studying in Class XII, thirteen boys and thirteen girls in the first year degree class, twelve boys and twelve girls in the second year degree class and thirteen boys and thirteen girls studying in the third year degree class. The tool used was Palsane's Study Habits Inventory. Means, standard deviations and t-test were the statistical techniques used for data analysis.

The major findings of the investigation were: (i) The mean score for boys was 61.16 and that for girls 56.94. The difference was significant at 0.05 level. The boys were found to have better study habits than the girls. (ii) There were sex differences in different aspects of study habits. (iii) About 91.0 per cent girls lacked the habit of preparing the topic in advance whereas about 81.0 per cent boys lacked this habit. (iv) The habit of note-taking was absent among 50 per cent to 80 per cent students. (v) Learning and memory skills were absent among more than 60 per cent students. (vi) The students had problems in planning their time for study, developing good reading habits and taking examinations.

652. SIDHU, K.S., *Standardization of a Vocational Interest Inventory for Diversification of Students at the Matriculation or Higher Secondary Level*, Ph.D. Psy., Pan. U., 1974

The major hypotheses of the study were: (i) Individuals differed in their academic and vocational interests. (ii) They tended to do better in the specializations which were to their liking. (iii) It was possible and worthwhile

to determine the academic-cum-vocational interests of an adolescent and offer him profitable and timely guidance in the light of these interests. (iv) A vocational interest inventory standardized on a suitable criterion group from amongst the successful students of various streams of semi-vocational subjects, would be a reliable and valid tool for diversifying the students in Class IX and guiding them well in time towards the most suitable stream in each case. (v) The students thus guided would not only show better results in their performance in respective streams, but would also enjoy learning the subjects of their interest and would also be able to enter into most satisfying occupations.

The inventory was standardized on 2,150 successful students of Class XI, taking 300 students in seven criterion groups (fine arts, agriculture, commerce, home science, the humanities, medical, non-medical) and fifty students in the technical group, which was the maximum available number in the group. The sample was selected from forty-six different types of schools (government, private, urban, rural, boys, girls, coeducational) from all parts and districts of Punjab. The inventory was designed on the pattern of Strong Vocational Interest Blank (SVIB) following the same item format, categories of items and their number, which was 400. It was prepared in one form, both for boys and girls. The trial form consisted of 700 items, which was administered to 160 students, each of the eight subject streams contributing twenty to the total number. With the help of item analysis, using chi-square test, 400 items were selected for the final form. After this, the final form was administered to the final sample. Data were tabulated in the form of percentages, on a 3-point scale for each of the eight criterion groups, separately. For contrasting each group with general group, student in-general group of 1,500 was set up, drawn proportionately from all the criterion groups. Separate scoring keys for all the criterion groups were prepared by computing weights for various responses to each item. Then scales of norms were prepared, on the basis of the frequency distributions of the scores of individuals belonging to each of the criterion groups. Reliability and validity of each scale was determined. The data were further analysed to draw allied and useful conclusions. This was done by making a comparative study of the ranges of raw scores and standard scores, and the mean raw scores and sigmas of different scales.

The major conclusions of the study were: (i) The inventory was dependable tool for the purpose of diversifying the students into different streams, as it significantly differentiated one criterion group from the other.

(ii) The reliability of the inventory in respect of all the scales was fairly high. (iii) It was a valid inventory on the basis of a number of possible evidences. (iv) Individuals differed in respect of their academic and vocational interests. (v) Individuals tended to do better in the specializations of their liking. (vi) After getting scientifically obtained information about his interests, the student tended to devote wholeheartedly to the courses selected in the light of the interests.

***653.** SINGH, G.K., *A Study of Adjustment of Mentally Gifted and Retarded Children*, Ph.D. Edu., Gor. U., 1982

The objectives of the investigation were: (i) to select mentally gifted and retarded students (boys and girls) of Class X on the basis of mental test, (ii) to study the adjustment problems of mentally gifted and retarded boys and girls, (iii) to study the techniques of adjustment of both the groups in different situations, (iv) to compare the adjustment level of mentally gifted and retarded boys and girls with that of average students, and (v) to study the socio-economic status SES level of both the groups of students with reference to that of an average group of students.

In all, 600 boys and 400 girls from Class X were selected by the stratified random sampling technique from three commissionerates of U.P. Joshi's General Mental Ability Test was used for measuring the intelligence of students. Adjustment Problems Checklist, General Adjustment Questionnaire, SES Questionnaire and Behaviour Mechanism Inventory in different adjustment situations were prepared by the investigator. Mean, standard deviation and percentiles were used for data analysis.

The findings of the investigation were: (i) There was no significant difference in the intelligence scores of boys and girls. (ii) Adjustment problems of mentally retarded students were different. (iii) There was a difference in the SES level of mentally gifted, average and retarded students. (iv) There was a difference in general adjustment ability of mentally gifted, average and retarded students. (v) Different adjustment situations had different effect on the three groups of students and their reactions were also different.

654. SINHA, J.C., *Role of the Family as a Unit and Vocational Interests of the Intermediate Students*, Ph.D. Edu., Agra U., 1978

The study proposed to answer the question as to what extent the family as a unit (parent-child relationship, socio-economic status and parental values) predicted the vocational interests of intermediate students. The main aims of the investigation were: (i) to study the vocational interests of students, (ii) to study some components of the family environment, and (iii) to study the role of the family as a unit in the vocational interests of the students.

The sample of the study consisted of 460 male students having an average intellectual level and studying in higher secondary schools/intermediate colleges of Mathura and Agra cities. The sample was selected from three types of institutions — government, aided and general, and those offering five different optional courses. Under dependent variables, the interests of the students in ten vocational fields were taken into account. These were physical science (Ps), biological science (Bs), computational (C), business (B), executive (Ex), persuasive (Pe), linguistic (L), humanitarian (Hu), artistic (A) and musical (M) fields. Thurstone's Interest Schedule was used to measure the vocational interests of students. Independent variables selected were parent-child relationship, socio-economic status and parental values. Parivarik Sambandh Suchi was adapted and standardized and Home Adjustment Scale of Saxena was used. An adapted form of Kuppaswami's SES Scale (Urban) was used to study the parents' socio-economic status. Sherry and Verma's Personal Value questionnaire was also used to study the personal values of parents. Five extraneous variables, namely, intelligence, sex, urban-rural differences, institution type and courses of study, were controlled. Tandon's Verbal Test of Intelligence was used to study the average students.

The findings of the study were: (i) Family environment characterized by amicable parent-child relationship inculcated among children love and liking for vocations in the scientific and executive fields. (ii) Family environment characterized by parental avoidance and high economic and social values motivated the students for vocations in computational, business and persuasive fields. (iii) Interest for vocations in artistic and musical fields was engendered in the family environment where children were not accepted by the parents and there was an absence of parental democratic values.

655. SUNANDA, G., *The Effects of Counselling on the Study Habits and Achievement of Teacher Trainees*, Ph.D. Edu., Madras U., 1980

The main objective of the study was to find out the effect of counselling on the study habits in its various components and achievement of the women teacher-trainees. The comparative effectiveness of three counselling types over the different personality types of the trainees was also studied.

The three types of counselling selected for study were leader-centred directive counselling, short-span counselling (SSC) and group-centred behavioural counselling. Maudsley Personality Inventory, Standard Progressive Matrices, Reading Test, Brown and Holtman Survey of Study Habits and Attitudes were used in the study. The investigator constructed a study habit questionnaire and adapted Gilbert's Daily Work Schedule. The university examination marks were taken as a measure of achievement. Three modules of counselling consisting of thirteen counselling sessions were also developed by the investigator.

A sample of 131 teacher-trainees was drawn from three colleges of education for women in Madras. Solomon four group experimental design was followed and the groups were equated on the IQ and previous achievement. Two-way analysis of variance and t-test and correlation were the statistics used for data analysis.

The major findings of the study were: (i) The treatment groups that received counselling registered significant gain in their academic performance and study habits scores. (ii) The controlled groups had nil or insignificant gain in these two variables. (iii) Group-centred behavioural counselling was found to be the most effective of the three types of counselling in improving achievement. (iv) The personality types had no influence on the academic achievement or study habits. (v) There was no interaction effect between counselling styles and personality types.

656. UCHAT, D.A., *Study of the Relationship between Intelligence Level of Standard X Students of Rajkot City to Their Vocational Aspiration and to Their Fathers' Education and Occupation*, Dept. of Edu., Sau. U., 1981 (Sau. U.-financed)

The study had the objective of analysing the relationship between the level of intelligence and (i) the vocational aspiration of the subjects, (ii) the fathers' education and (iii) the fathers' occupations.

Involving the three independent variables (vocational aspiration, father's education and father's occupation), nine null hypotheses were framed, three for the total subjects (irrespective of sex), three for boys and three

for girls only. From twenty-two out of the forty-two high schools of Rajkot City, 1,143 students of Standard X were selected, including 718 boys and 425 girls. The schools and their divisions were selected randomly. Out of the selected twenty-two schools, eleven were boys' schools, six were girls' school, and five were coeducational schools. The intelligence level of the subjects was determined with the help of Desai-Bhatt Group Test of Intelligence. Certain data, such as name, age, sex, vocational choice, father's education and father's occupation, were collected on a data sheet. The null hypotheses were tested with the help of t-test. Overall relationship of the intelligence level with the vocational aspiration, father's education and with father's occupation were checked through chi-square test.

The major findings of the study were: (i) Boys with higher level of intelligence selected higher-level occupations. (ii) Girls who aspired for higher-level vocations possessed higher level of intelligence. (iii) The vocational aspirations of the subjects (irrespective of sex) were related to their intelligence level; the subjects of higher intelligence level possessed higher vocational aspiration. (iv) The intelligence level of boys with better educated fathers was higher than that of boys with less educated fathers. (v) Girls having higher educated fathers possessed higher intelligence level than the girls having lower educated fathers. (vi) The intelligence level of the subjects (irrespective of sex) had relation with the education of their fathers; the higher the educational level of fathers, the higher was the intelligence level of their children. (vii) The intelligence level of boys having fathers in higher occupations was higher than that of boys with fathers in lower occupations. (viii) The intelligence level of girls with fathers in higher-level occupations was higher than that of girls with fathers in lower occupations. (ix) The intelligence level of subjects (irrespective of sex) was related with the occupation of their fathers; the children of fathers working in higher-level occupations had higher level of intelligence.

657. VOHRA, H.B.L., *An Investigation of the Relationship among Intelligence, Aptitude, Personality, Academic Achievement and Vocational Choice of Polytechnic Students*, Ph.D. Psy., Pan. U., 1977

The major objective of the study was to investigate the relationship of the psychological variables of intelligence, aptitude, personality, and academic achievement, with the occupational choice of polytechnic students.

The sample comprised 335 polytechnic final year students (males) from the three popular branches of engineering (electrical-100, civil-110, and mechanical-125), selected randomly from six polytechnic institutions. The tools used for collecting data were Raven's Standard Progressive Matrices, Space Relations, Numerical Ability, Mechanical Reasoning, and Abstract Reasoning Aptitude Test from the Differential Aptitude Test Battery (Form A) by Bennett, Wesman, and Seashore, Eysenck's Personality Inventory, Semantic Differential Scale for Occupational Choices by Mohan and Banth; academic achievements were taken from the official records of the institutions. For the analysis of data, statistical techniques of mean, standard deviation, correlation, t-ratios and factor analysis by principal axis and varimax rotation were employed.

The major findings of the study were: (i) The polytechnic students gave definite and well-considered choice for the group of occupations (technology) for which they were undergoing training. (ii) Most of the choices in various other groups and in technology group were given for the first level of occupations. (iii) The means obtained on intelligence and aptitude tests were comparable and in some cases higher in the case of polytechnic students than in the case of other general academic course students. (iv) The scores on H/I and N dimensions of personality were less in the case of polytechnic students than in the case of students of other professional and general academic course groups of equivalent age levels. (v) Intelligence played little role in their choices for technology group of occupations. (vi) Occupational choice (technology) and aptitude were significantly and positively correlated. (vii) Personality and academic achievement did not play any role in the choice of occupational courses. (viii) There was low correlation between personality and intelligence, personality and aptitude for these courses. (ix) The relationship between academic achievement and personality dimensions H/I and N was found to be negative. The low score on neuroticism and extraversion was associated with high achievement in these difficult, complex courses requiring a lot of persistence to do work at desk and machine. (x) Academic achievement and aptitude were positively correlated in the whole sample as well as samples in different branches. This was further supported by the factor analysis as both these variables formed one common factor. (xi) The choices of polytechnic students were not having a rational and scientific basis, as no relationship was found between the occupational choices and personality, academic achievement, and intelligence of the students. Lack of rational basis could be the major reason

for wastage in these institutions.

658. YADAV, R.K., *A Study of Motives for the Vocational Preferences of Adolescents*, Ph.D. Edu., Agra U., 1979

The objectives of the study were: (i) to find out the nature and extent of relationship of intelligence, scholastic achievement, socio-economic status, values and needs with vocational preferences to determine their role as motives, and (ii) to predict vocational preferences by means of intelligence, scholastic achievement, socio-economic status, values and needs. The subsidiary objectives of the study were: (i) to find out the patterns of vocational preferences of adolescents, (ii) to compare the vocational preferences of arts, commerce and science students, (iii) to find out the value system of adolescents, and (iv) to find out the need patterns of adolescents.

A sample of 600 students of Classes XI and XII was selected from the five intermediate colleges of Agra. The unit of selection was a section of students. In each institution selection of the section was done randomly. Tests used in the study were Jalota's Sadharan Manasik Yogyata Pariksha (Group Test of General Mental Ability), Joshi's Samanya Manasik Yogyata Pariksha (Test of General Mental Ability), Cattell's Culture Fair Intelligence Test (adaptation), Mehta's Samoohik Budhi Pariksha and Tandon's Samoohik Manasik Yogyata Pariksha 1/61 (Group Test of Intelligence).

The findings of the study were: (i) Intelligence and socio-economic status were two factors which start influencing the vocational preferences of the adolescents much earlier at the time of choosing their courses of study. Intellectually brighter and economically better-off students went to science and commerce streams and poorer ones to arts, and in turn their vocational preferences were, by and large, in tune with their courses of study. This conclusion extended support to Super's developmental theory of vocational behaviour. (ii) Intellectually, academically and socio-economically, superior adolescents were more definite and specific in their vocational preferences than their opposites. (iii) Needs seemed to be stronger motives for vocational preferences than values, and adolescents preferred those vocations which could potentially reduce their needs. (iv) A fairly large number of vocational preferences were predictable by the motives included in this study. The extent of determination of vocational preferences by these motives varied from 20 per cent to 30 per cent.