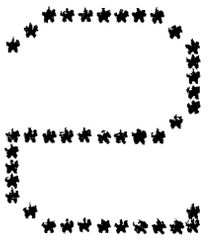

REVIEW OF LITERATURE

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References

CHAPTER 2 TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

Some of the important studies concerning identification patterns, motivation and school achievement of talented students are reviewed in the present chapter. Most studies of talented children pertain to those who have been identified mainly through the use of intelligence tests.

The various investigations that have so far been carried out are mainly on the nature and development of giftedness and talent. These studies include identification and characteristics as well as problems, adjustment, education, motivation, achievement and socio-economic

background of talented children. To report all the studies, would be a task beyond the scope of this investigation. Hence only those studies which are most relevant to the present investigation are emphasized in this chapter. More specifically studies which shed light on characteristics, identification patterns, achievement values, motivation, behaviour orientation, and school achievement of talented students are reviewed here. The available studies are classified as shown below :

(A) Studies concerning traits and characteristics of Gifted and talented students.

(B) Studies concerning identification patterns and motivation of talented students.

(C) Studies concerning academic and non-academic accomplishments of talented students.

In the area of the gifted and the talented, 'new' and 'promising' developments have emerged through continuous research. The review of literature presented in this chapter includes information concerning what specific areas have been studied by researchers, what methodologies have been followed, and what new trends or developments are most prevalent.

2.2. (A) Studies Concerning Traits and Characteristics of Gifted and Talented Students

In this section, various studies pertaining to characteristics of gifted and talented students carried out with developmental, cross-sectional, longitudinal and follow up approaches have been reviewed. These studies are concerned with investigation of the early lives of eminent persons, outstanding abilities and traits of Merit Scholars, talent search, and comprehensive exploration of the talents and achievements of adolescents.

The main body of findings about the gifted and talented is derived from the monumental studies of Terman (1). These studies were designed to discover what physical, mental, and personality traits are characteristics of gifted children as class and what sort of adult they become. The main purpose of his investigation was to determine in what respects do the typically gifted child differs from the normal child of his age. In a longitudinal study covering a period of more than 35 years, Terman made an intensive study of more than a thousand gifted children of California in 1921 and reported their characteristics, development and behaviour. The report was published in 1925 in 'Genetic

Studies of Genius,' Volume I. (2)

In selecting gifted students, teacher judgment and IQ of 135 and above were used as criteria. A group of 800 general population from the same schools was used as 'controls'. Both boys and girls were included in the sample.

The data for each individual in the major sample included social, personal and character traits; home and school background; physical and personality traits; interests, hobbies, vocational choice and achievement. These data were gathered by using various techniques including intelligence tests, achievement tests, school and home information sheet, questionnaire, personality rating scales and interviews with parents, teachers and students.

Terman's study indicated that gifted children as a group were superior to their age mates in physical characteristics, school achievement, maturity of interests, social and personality traits. The gifted children came from homes with higher socio economic status. Most of the children had atleast one parent who was a college graduate. The typical gifted youngster had multidimensional abilities of higher order.

Educationally, the average gifted child was accelerated in grade placement about 14 percent of his age, though they were found 44 percent in advance of the norms in grade scores of academic achievement in basic area. They were ardent readers and about 90 percent of them read more than the average child. They enjoyed activities typically followed by older children which involve individual skills or some intellectual pursuits. The interests of the gifted child were many-sided and spontaneous. They also surpassed normal children in honesty, moral traits, self-confidence, persistence, abstract thought, ability to adapt oneself to changing circumstances and quickness of mental process. The gifted students were found to function at the level of those who were senior to them by several years. They were found interested in collections and specialized hobbies, coins, rocks etc.

The first follow-up report (3) was published in 1930 after five years, a second (4) in 1947 after twenty five years and a third (5) in 1959 after 35 years.

Follow-up studies of Terman's gifted subjects revealed that they tend to remain above the average of general

population in health and physique; social and personal traits; personality characteristics such as sense of humor, cheerfulness, desire to excel, will power, self-confidence etc., interest and extracurricular activities.

School achievement tended to remain high in line with original findings. Majority of the subjects graduated from high schools before seventeen. More than 85 percent of the group entered college and almost 70 percent graduated, and substantial number went on for advanced degree included 14 percent of men and 4 percent of women graduates against 3 percent of generality of college graduates. Their intellectual, scholastic and vocational achievement were especially noteworthy. Of the scientists, 47 were listed in the 1949 edition of American Men of Science. On the whole they had a better record of employment with a high level of professional accomplishments, and they turned out to be superior citizens with better adjusted home life than people in general population. They gave every indication that giftedness in youth is a fairly good indication throughout life, though some of them did not achieve in keeping with their potentialities.

Terman's study is obviously a classic in the field and constitutes an important landmark in the investigation of giftedness. It has answered a number of questions concerning gifted child, and set the pattern for further research.

The typically gifted child was found superior not only in intelligence but in particularly all the traits that were studied; including school achievement, versatility, character traits, play information, social adjustment and physique. Thus the value of Terman's investigation lies in the fact that he represented factual information concerning the over all functioning of the gifted children. This investigation is significant because it opened a new and useful area of research.

Hollingworth (6) began her work with superior children in 1916, and published her monograph 'Gifted Children' in 1926 - a general summary presentation of the background of the study. Her work lay in the highly organized educational experiments which she herself conceived, planned and supervised in every detail upto the time of her death.

The purpose behind the educational experiments was to determine what constitute 'proper' educational provisions for

gifted children, though the primary emphasis was placed on studying the children genetically, physically, psychologically and educationally.

In the selection of pupils she puts a good deal of weight on the nominations of principals and teachers, physical and emotional maturity of the child, and a personal interview with children and parents. An IQ of 135 or above was set a minimum requirement for admission in the experiment class. She worked intensively with two separate groups of gifted children, the total number in both groups somewhat exceeding one hundred.

Hollingworth's (7) own intensive longitudinal studies were of twelve very exceptional children with an IQ of 180 or above on the Stanford-Binet test. She was interested in the optimum development of the gifted child. Her careful observations and controlled studies during the year experiment period and the years following their graduation revealed many important facts.

She reported that high IQ children were larger and stronger than their agemates, and were accelerated in basic skills. All the gifted children showed superior capacity

for learning but their actual accomplishments as well as the degree of their personal and social adjustment depended to a large extent on the methods used by those who were responsible for their development. She showed that the gifted were usually superior in physique and physical stemina, and were more pleasing in appearance than the average. They were found to be more stable emotionally and had a low rate of juvenile, misbehaviour or delinquency. She reported that in the opinion of their teachers, gifted were more inquisitive, more imaginative, more courteous and had a kneer sense of humor than the average child.

Two follow-up studies of this group appear in literature. First, when the students were of high school age, and again when they approached maturity (8). These individuals maintained their high intellectual status as they matured. They went on to high school and college with good records. Some who came from low income families were unable to move ahead in their school careers, possibly for economic reasons. Those who continued their education became high school graduates at an average age of 16.

Hollingworth pioneer studies have had profound and far reaching effects upon the practices followed in schools.

She left up a body of facts concerning the gifted child. Both Terman and Hollongworth placed great reliance upon quantitative and objective instruments of measurement and insisted upon systematic and exact recording of data.

Lamson (9) studied the high school careers of 56 gifted children who had been identified as top centile IQ status before the age of nine years and who had been placed in special opportunity classes of Hollingworth. They had entered high school on average before the age of twelve and they were about to graduate at an age of sixteen. These children were compared with a control group of 106 students in the same high school grades.

These gifted children were significantly superior to the control group in scholastic achievement. They had a smaller percentage of failures, though in age they were two years younger. The gifted group had participated in more extracurricular activities than the control group.

The gifted were significantly superior to the control group with respect to intelligence, general quality of school work, and sustained effort. In self control, general development, and appearance they were rated as somewhat

superior to the average pupils whereas in popularity and in conceit the two groups did not differ much. The intellectual development of gifted group as measured by tests was remarkably consistent.

In 1924-25 Witty (10) conducted an intensive study of the mental, physical and social traits; interests and achievement of one hundred gifted children. Fifty one boys and 49 girls with an IQ 140 and above on Stanford-Binet Intelligence Test were selected as subjects from the schools of Kanasas city.

In the physical status and general growth the children were undoubtedly above average as a group. They proved to be well adjusted in school life. Their parents averaged thirteen years of formal education, and fathers were rated above average in occupational status. Most of the gifted subjects had had the advantages of being stimulated by cultural influences at home. The superior traits of the gifted children and their family background proved to be similar to those reported by Terman.

Witty made a follow-up study of fifty gifted children - 26 boys and 24 girls after five years. These children had

maintained their superior mental ability and school achievement. At the time of second follow-up study (11) most subjects were in colleges. Half of the boys and seventy percent girls earned A grade in their school studies. They participated fully in school life and received more honours than average students.

On the whole, they maintained their high level in general information and all around academic attainment.

Lehman and Witty (12) examined the play behaviour of fifty gifted children and fifty matched control children. They found that the gifted children engaged in the same diversity of plays and games activities as control groups, but avoided the more competitive and more social activities. The gifted girls engaged in a somewhat larger number of play activities than the average girls while the gifted boys engaged themselves in a slightly smaller number of play activities.

Hildreth (13) made a comparative study of intellectually gifted children with an IQ of 130 or above and those of average ability ranging between 90 and 110 IQ. Fifty children in each group were matched for age and sex.

Analysis of result revealed that gifted group was superior to control group in energy, physique, language,

information, judgment and reasoning, personality and character traits, and sense of humor. The gifted children had more experiences to relate and showed more skills and originality. The gifted were also found to be more independent and self-assured, active and vivacious in comparison to control group.

In a longitudinal study of three mentally accelerated children and a matchee average child, Hildreth (14) found no difference in physical status between the high-rating boys and the boy of average ability who came from an equally superior home.

In 1943, Hildreth (15) made a follow-up study of Lincoln school graduates by means of a questionnaire requesting information about further education and present employment. A comparison was made of the reports for a mentally superior group, 52 graduates with IQs of 130 or higher on mental tests given before the age of thirteen, and a group of 52 students of relatively less ability, with IQs below 120. The median for the high IQ group was 140, for the low group 111. Parental occupations were similar for two groups.

The college-going record showed that of the high IQ group 30 graduated whereas of the low IQ group, 11 graduated.

Of the high group 21 went on for graduate work, compared with 4 of the low group. There were 10 master's degree graduates, 7 Ph.Ds. and 4 M.Ds. in the high group, compared with 4 master's degree graduates from the lower group. In the gifted group 17 had average college grades of A or A-, but none of the lower group had earned such high average grades. Among the gifted 16 had entered professional careers, in contrast to 6 of the lower group.

McGuire et al (16) conducted a human talent project and collected information about 1242 junior high school students. The purpose of this research was to identify dimensions of talented behaviour among boys and girls in their junior high schools.

It was hypothesized that variations in valued performance in junior high school is a function not only of cognitive skills and attributes but also a function of elements of personality and motivation, as well as ways in which boys and girls valued performance and pressures imposed upon them by parents, age-mates and teachers.

For this purpose, forty one variables were selected, out of which fourteen variables were used to assess cognitive, perceptual and psychomotor abilities; fourteen variables

were used to assess motivation and personality; seven variables reflected pressures imposed upon the boy or girl by parents and age-mates; and remaining six variables were used to measure valued performance. For convenience each variable was defined with the name of the instrument employed.

The battery of data gathering devices was administered to more than 1500 students of VIIth grade in Texas. Complete data for the 41 variables were available for only 1242 subjects - 608 girls and 634 boys.

The methods of multiple regression and multiple factor analysis were employed to complement one another and to demonstrate the value of the model for research in talented behaviour.

Nine factor variables derived as a result of the operations apparently fit the model for research in human talent. Two of them, cognitive approach and divergent thinking clearly were underlying dimensions of the potentialities of an individual pertinent to talented behaviour. The third factor variable, Socially Oriented Achievement Motivation (SOAM) was a common element in a

person's expectations regarding supportive or non-supportive responses of self and others to one's actions. Boys and girls high on this variable represented themselves as being accepted of school and cultural standards, motivated toward academic achievement, stable, somewhat restrained positive toward teachers and people.

The fourth and fifth factor variables Peer Stimulus Value (PSV) and Age Mate Avoidance (AMA) represented essentially affiliative and distance aspects of assessments boys and girls made of one another. PSV suggested that persons high on this factor were active, accepted, self confident, effective individuals who were regarded as models by their peers. AMA suggested that lack of model value was associated with impulsivity and avoidance by peers. The deviant person was regarded by agemates as one who disliked school, had to be told what to do and did what he felt, yet depended upon peers for approval.

Two factor variables have been identified specific to boys and two for girls. The work of McGuire et al isolated certain predictors of talent which were non-cognitive in nature.

The comprehensive exploration of the talents and achievement of high school youth was carried out in 1960

under the direction of Flanagan (17). The study was conducted to know what sorts of abilities were possessed by the superior individuals and which elements in the testing were predictive of unusual development. A sample of neafly fifty thousand students were administered an extensive series of tests measuring aptitudes, abilities, achievement and background factors.

Flanagan analysis of data clearly showed the existence of great variation of ability and achievement within any given high school grade. On most tests of information nearly 30 percent of ninth-grade students already exceeded the average of the twelfth grade students. Although test score difference between urban and rural pupils were small, regional differences were considerably great. Flanagan estimated that the top five percent in ability among high school youths learned twice as fast as others in preferred subjects.

In an investigation Barbe (18) studied the personal adjustment, family background and school achievement of 65 highly gifted children with mean IQ of 158 and 65 moderately gifted children with mean IQ of 129. The sample drawn throughout the state of Ohio, included 31 matched pairs of girls. The highly gifted children were found in

the more affluent and more highly educated families. No difference was reported in the age at which learning to read began or in reaching physical milestones. The highly gifted group was reported as having more behaviour irregularities.

Laycock and Caylor (19) compared a sample of 81 gifted intermediate grade pupils (Binet IQ 120+ and CTMM 130+) with less gifted sibling, having an IQ at least 20 point lower, on a broad spectrum of physical and anthropometric measures. They found no differences of any of the physical measures between matched pairs. They concluded that when environmental differences were controlled, the gifted child did not reveal superiority in the physical dimension. There was also some overlap in IQ in the two groups due to the method of chosing nongifted.

Drew (20) had conducted a research project with the superior students in the Lansing, Michigan public school. One hundred fifty gifted students were selected through group tests and individual tests. She found that three-fourth of the gifted came from average homes. They showed more positive attitudes toward self and school than average students. They tended to be more self confident and aware of their above average ability.

In a critical evaluation of approaches to the identification of gifted students Drew (21) found that gifted adolescents appeared very much like when viewed in terms of group intelligence and achievement tests. She sensed that adolescents showing gifted performance had unusual combination of talents and styles. Drews developed four-way classification of gifted adolescents as high academic achiever, social leader, creative intellectual and rebel.

The high achievers were typical good students, conforming to the demands of the school in all particulars and most satisfied when assignments were specific and the school's demands clear and unambiguous. They generally received the highest grades and put their school work ahead of pleasure. Social leaders found themselves more concerned with people than with ideas. They were popular and well liked by their peers. They received good grades, but they did not achieve very well on difficult scholarship examinations. The creative intellectuals received the poorest grades but had the greatest fund of knowledge and widest intellectual interests and concern for ideas, far greater than that shown by other groups. They read widely and were concerned with creative and cultural endeavours. Drew

described rebels as individualistic, creative non-intellectuals. They scored low on social responsibility and higher on intelligence tests. On creativity measures they were not highly fluent, yet they were highly original.

In a project talent study of secondary school students throughout the United States, Marland (22) made comparison of gifted and average students on their academic achievement and educational and vocational choices. Data were gathered through various achievement and aptitude tests and by using questionnaire. Data of the top two and half percent in ability were compared to similar data on the two and half percent closest to the mean of total population.

The information from grades, curricular choices and composite grade point averages showed that significant numbers of the most gifted high school students were failing to achieve satisfactory, and were curtailing their opportunities for meaningful achievement as adults. The gifted participated more actively than the average in a wide variety of activities including not only intellectual and aesthetic, but also in organizational and athletic pursuits. Eighty seven percent gifted planned to complete college.

The first follow-up study found that nearly one-fifth of the gifted did not attend college due to lack of funds and other reasons. Of the gifted who had planned to enter college, 84 percent were in college at the time of the follow-up. The second follow-up study, after 5 years, gave indications of both college success and probable career choices. The highest number of the gifted were employed as accountants or teachers. Dissatisfaction with their occupations, and intention to leave them were expressed by many.

Cox Miles (23) conducted a study of 301 eminent people of history with a view to discover the minimum level of mental endowment that they have possessed in order to have accomplished what they did. Among these eminent were the great historical figures in music, art, philosophy, science and other fields. These individuals were selected on the basis of the biographical materials.

The data for biographical works together with individual case studies, served as bases for mental and personality trait ratings and evaluations of background and environment. She observed that these eminent people differed from general child population in such traits as independence

of thought, originality, creativeness, trustworthiness, persistence, desire to excel, confidence in their abilities and great strength of character.

Cox concluded from her study that people who achieved eminence had superior advantages in their early environment, their behaviour indicated an unusually high degree of intelligence.

In an investigation, Roe (24) studied 64 eminent scientists including 20 biologists, 22 physicists and 22 social scientists. Information regarding their life history, family background, professional and recreational interests was obtained by personal interviews. Each of the 64 individuals was given an intelligence test and was examined by two of the modern techniques for the study of personality: The Rorschach and the Thematic Apperception Test (TAT).

Of these 64 scientists none came from a very rich family, most of them came from middle class environment. Their economic level was varied, ranging from very poor to well to do. Fifty three scientists were the sons of professional men. Most of them developed interest at an early age. The extracurricular interests of these men were varied.

A relatively large proportion of them came from homes in which the mother was dominant. Over half of these men did not decide upon their vocations until they were juniors or seniors in college. They worked long hours for many years. Many of them had collections and had performed experiments as children.

Gifted men of eminence revealed a general need for independence, for autonomy, for personal mastery of the environment, and for independence from parents. They were not especially aggressive, though highly successful, and revealed unusual abilities both to generalize and to note extraordinary details.

In an investigation, Gray (25) studied the scholastic aptitudes ratings, scholastic records and physical measurement and extracurricular and social activities of 126 boys and 28 girls who entered Columbia and Barnard Colleges at 15 years of age or younger. These youngsters had not been identified by high IQ's in childhood. They were found average or high on Thorndike Scholastic Aptitude Test scores at college entrance. Their mean scores (92) rated higher than the mean (87) reported by Burkes, Jensen and Terman's gifted children in 1930. Gray's 126 boys were younger at college entrance

than Terman's gifted children.

Both boys and girls as a group had fewer college entrance deficiences than the average students in the same college. Twenty nine boys and three girls had state scholarship awards as freshmen. Eighty four percent boys and 79 percent girls graduated from college. The health histories were favourable and physical fitness test scores rated above the college average. They engaged in more athletic and other extracurricular activities than average subjects.

Their responses to an emotionality questionnaire indicated more favourable adjustments than those of the comparable norm group. A relatively high percentage of them won Phi Beta Kappa honours and general honours.

In an investigation, Nichols and Davis (26) studied the characteristics of 1184 highly superior college students, who had been National Merit Semifinalists. Marked difference was observed between these superior students and the average college graduates. The scholars appeared less religious and conventional, more idealistic and rebellious, less oriented to social or athletic interests,

and showed many other differentiating characteristics. The study revealed that the Merit scholars were of higher rank on many aspects of personality attitude, interests and career plans, even when socio-economic variability was controlled.

Weir (27) explored the characteristics of scholars selected primarily on the basis of comprehensive achievement and scholastic aptitude tests. The report disclosed that most of the scholars came from families of higher socio-economic status than was the case in a random sampling of college students that served as a normative comparison group. Most of these scholars were males and received college honours. Most of them had planned to go ahead with graduate study, and more tended to do research in an academic sphere. They were less interested in security than an opportunity for leadership.

In an investigation Warren and Paul (28) compared Merit scholarship winners with unselected college students. The scholars appeared more mature in their interactions with the external world. They showed greater ego strength and appeared to operate at a higher level of personal effectiveness. The Merit scholars valued the theoretical

and aesthetic orientation relatively higher than the economic or utilitarian one and exhibited high levels of aesthetic awareness and appreciation. They appeared less authoritarian and rigid in their approach to ideas. The scholars exhibited greater individual independence and a tendency toward original and unconventional ways of responding to the environment.

The report of Indian Council of Social Science Research ' A Survey of Research in Psychology ' (29) published in 1972 indicated that hardly any significant study on the gifted has been carried out at a higher level of education. Recently, a few psychologists and educationalists have begun to pay attention to this relatively unexplored area. Some of the important researches that have been carried out so far have been discussed below.

Shah C.Z. (30) studied socio-economic status, occupational interests and anthropometric characteristics of 240 superior students. Information was obtained about pupils from the results of S.S.C. Examination Board and those who secured 70 percent marks or more were enlisted for this study. Teachers' ratings were also obtained for

these pupils to get further information about their competence. Two hundred forty - 200 boys and 40 girls - who had an IQ of 130 and above on group intelligence test were selected as subjects. For the purpose of comparison a group of 33 superior adults and 150 average students were taken as second and third sets of samples respectively.

Two questionnaires , one for superior and average students and the other for superior adult group were designed to get information regarding social adjustment, school, anthropometric measures, occupations, interests, general occupational status, health and income. The data were analyzed in terms of percentages. Chi-square test was used for the analysis. The major findings were as follows :

(1) A greater proportion of superior children came from families whose income and occupation level were considerably higher than that of the average subjects.

(2) Superior children were found to come in greater number from families where the father had received higher education and mother had received primary or secondary education.

(3) Higher percentage of superior boys and girls came from joint families.

(4) Superior pupils passed S.S.C. Examination at an earlier age in comparison to average students.

(5) Reading preferences of superior boys were more varied than those of average.

(6) The superior pupils in contrast to average subjects rated themselves higher in the field of science, literature, reading, sports, travel etc.

(7) Vocational interests of superior boys were found to be limited to the fields like engineering, medicine and commerce, whereas those of average boys were more varied and divergent.

(8) The vocational interests of superior girls were many and varied while those of average girls were limited.

Deo (31) worked on developing better procedures for the identification of gifted adolescents and studied their characteristics as against normal group. Comparisons of the gifted and non-gifted were made with respect to self concept, personality characteristics, home background and adjustment in various areas.

Two hundred adolescents - 100 gifted and 100 average with an equal number of boys and girls - in the age group fourteen to eighteen were selected from different schools and colleges in and around Chandigarh, after administering intelligence test. Differences between two groups were

studied by self-concept inventory and questionnaires for home and school background prepared by the Department of Education, Punjab University. Bernreuter's Personality Inventory and the Bell's Adjustment Inventory were also used. Students above 85 percentile in verbal tests and those above 95th percentile in non-verbal tests were selected as gifted children. The average group was selected from the adolescents falling between 40th and 60th percentiles on both the tests. The 't' ratios were calculated for finding the significance of the difference between means. For the Bernreuter and Bell scores, the chi-square test was employed to test the independence of frequencies with the factor of giftedness. Analysis revealed that -

(1) Gifted boys were more self-accepting and the average were more self-rejecting.

(2) Gifted girls were more self-rejecting than the average girls.

(3) The gifted came from parents higher in profession, income, education and other activities.

(4) Parents of gifted children showed higher professional aspiration for their children.

(5) The gifted were superior in physical health but more nervous and worrying.

(6) Gifted boys were better adjusted than the average boys, but for the two groups of girls there was no difference

(7) Gifted adolescents showed better educational development, preferred intellectual work and had better educational facilities at home.

Bhatt (32) conducted a study of gifted children to develop 'simple and inexpensive' procedures for identifying the gifted children; and to study their personality traits. A sample of 180 pupils - 110 on the basis of IQ scores, 45 on the basis of achievement records and 35 on the basis of teachers' rating - were selected for the study. A list of traits was developed, which were normally found among the intellectually gifted. Out of fifty nine traits, thirty nine were selected on the basis of a tryout for inclusion in the final list. The list was validated against the traits actually possessed by a known group of intellectually gifted children selected on the basis of IQ scores alone. The reliability of the trait test was obtained by the test-retest method. The validity was obtained by rating the non-gifted on the list and comparing their scores with those of the gifted.

Cross validation studies were conducted in four schools. A check on this 'Short Cut' method was made by administering the list to a school population of 957 pupils spread over twenty five classes in four different schools in the semi urban and rural area. The method found to work satisfactorily.

At the second stage of the work, personality traits of twenty gifted and twenty non-gifted were studied by interview technique. The gifted were found to be distinctly superior to the non-gifted in intellectual pursuits, regularity in studies, leadership qualities, originality, understanding, self-confidence, politeness and in choice of companions.

Mrs. Pandit (33) studied the adjustment problems and reaction to various frustrating situations of the gifted children.

The criteria adopted in the selection of gifted children included the level of intelligence quotient, teachers' rating and parents' rating. Bhatt-Desai Group Test of Intelligence (Verbal) was used for Gujarati medium school and Progressive Metrices (Non-verbal) test was used for English and Marathi medium schools. The tests were administered and scored according to the instructions in the manual.

Those whose IQ was 120 and above were selected as gifted, those whose IQ was between 90 and 110 were considered to be average and those who earned IQ below 90 were considered to be below average.

Total sample of the gifted consisted of 150 subjects including 80 girls and 70 boys. The group of non-gifted also consisted of 80 girls and 70 boys i.e. in all 150 subjects. The non-gifted was selected separately on the basis of the teachers' rating and school achievements.

The various tools such as problem check-list, frustration producing devices and inventory for measuring self-concept were constructed. The reliability and validity of the various tools were established.

The responses to experimentally produced frustration were analysed, both qualitatively and quantitatively, so as to know how they reacted to the different frustrating situations.

The major findings were as follows :

(1) It was observed that the gifted tended to evaluate the situation more positively and critically than the non-gifted.

(2) There was no effect of frustration producing instructions on the anxiety scores of gifted and non-gifted boys and girls but the interaction effect was statistically significant.

(3) The gifted children had comparatively less problems than the non-gifted.

(4) The gifted girls had comparatively less problems than gifted boys. Their overall adjustment was superior in comparison to gifted boys.

(5) The gifted boys had less problems than the non-gifted boys.

It was objectively observed that gifted and non-gifted differed in their responses when faced with a frustrating situation.

In an investigation Lal (34) examined emotional stability and characteristics of superior and average pupils. Seventy one superior and an equal number of average boys from ninth and tenth grades with age ranging from 14 to 16 were selected on the basis of their performance on Mehta's Group Test of Intelligence, Bhatia's Battery of Performance Test of Intelligence and Teachers' rating. Emotional stability was assessed by the personality inventory developed by Lal, the Rotter's Incomplete Sentence Blank and the Rorschach Ink Blot Test. The average and superior pupils were equated on the basis of their socio-economic status using Kuppuswamy's

Socio-Economic Status Scale.

Groupwise comparison of superior and average pupils revealed that the former had a slightly better tendency toward adjustment in general but the difference was not significant. The superior group had more favourable attitudes toward society and sex, while the average group had more favourable attitude toward life and morals. Superior and average pupils were almost equally well adjusted in most social situations. The average group was better adjusted in situations related to the school and the difference was significant. Superior group was found to be more emotionally stable and better adjusted. The superior group had lesser degree of tension and fewer conflicts.

In an investigation Joshi (35) studied creativity and personality traits of the intellectually gifted high school students. A sample of 935 pupils who scored an IQ of 120 or more on the Desai-Bhatt Test of Intelligence was drawn from 23 urban high schools of six districts in Gujarat. There were 425 boys and 510 girls studying in seventh to eleventh grades with age ranging from twelve to nineteen.

The gifted students were further divided into three groups as superior, very superior and extra ordinary gifted

students according to IQ scores. Fifty one highly gifted students with an IQ of 140 and above; 221 very superior students with IQ of 130 to 139; and 663 superior students with IQ of 120 to 129 were used as subjects. Highly gifted students were compared with very superior, superior and backward children. The backward children had an IQ of 90 and below.

Creativity was assessed by Torrance Test of Creative Thinking. Personality traits were measured by using Cattell's Sixteen Personality Factors Test. Correlations of creativity with intelligence, personality traits, and achievement in different school subjects were worked out. The major findings were as follows :

(1) There was positive and significant correlation between intelligence and creativity.

(2) Creativity was positively and significantly correlated with subjectwise school achievement excepting English language.

(3) The correlations between creativity and various personality traits were significant only in case of few personality traits.

(4) Giftedness was related to character or super ego strength.

(5) Neither giftedness, nor sex, nor age played any significant role in contributing to the following personality factors; sociability, surgency, adventurous , shrewdness, insecurity, high self sentiment and high ergic tension.

In sum, numerous past and recent studies reviewed thus far in this section have indicated that gifted and talented youth constitute a unique population, differing markedly from other agemates in ability, talents, interests and psychological maturity. Various studies revealed that talented children function at levels far in advance to their agemates. They are superior in both qualitative and quantitative characteristics of mental ability.

Gifted children have been found to be better adjusted than the general population. They are found to enjoy social associations as others do, but tend to relate older companions and games involving individual skills and intellectual pursuits.

The advanced psychological maturity is found among the gifted regardless of their socio-economic status. The social and cultural background of the gifted as a group tend to be considerably better than that of general population. Talented children generally come in relatively high proportions from homes in which both parents are highly educated and in which father is engaged in high prestige occupation.

The various findings regarding educational attainment have indicated that the talented as a group, excel in most areas of basic skills. Most of these students learn quickly,

master scholarly skills early, secure higher grades, participate in more extracurricular activities, have more hobbies and varied interests, and have more positive attitudes towards schools in comparison to their agemates. They enjoy activities typically followed by older children. In physical status as well as vigorous health the gifted are above average as a group. The various aspects of the background, development, interests and achievement of talented students are found to be clearly marked by superiority.

Follow-up studies have shown that the gifted individuals maintain their superiority throughout life. School achievement tend to remain high in line with original findings. The talented tend to remain above average of the general population in health and physique. On the whole, talented individuals have fulfilled their early promise as capable, productive adults. Follow-up studies also indicate that success in school and in life as a whole is dependent not merely on good intellect but also on certain personal qualities, ambition to do well, drive to achieve and family background.

Numerous studies of the Merit Scholars and eminent persons have indicated that they tend to be higher on many aspects of personality, attitudes, interests and career plans. These studies also indicated less convention

oriented behaviour, more originality, higher valuation of the theoretical and aesthetic than the economic and utilitarian, more positive self concepts, more independence and better attitudes toward school on the part of Merit Scholars and eminent persons.

The total impression from these studies and others related studies is of a population which values independence, which prizes integrity and independent judgment in decision making, which rejects conformity for its own sake, which is more tasks and contribution oriented than recognition oriented, and which possesses usually high social ideas and values.

2.2. (B) Studies Concerning Identification Patterns and Motivation of Talented Students

In this section, four studies are reviewed, two of which are pertaining to identification and motivation patterns of bright students and two studies examine the differences in respect of anxiety, school attitude, peer acceptance etc. among groups based on creativity or intelligence. The various researches on achievement have

emphasized three main aspects of the problem :
(1) Parental attitude relative to scholastic performance (2) Personality factors and (3) Socio-Economic Correlates of academic achievement.

The two studies carried out by Ringness (36, 37) pertain to parental, teacher and peer stimulation in the academic achievement of the students. It should, however, be recognized that these two studies differed from the present investigation. In that the three groups based on achievement in Ringness's studies are compared with one another in respect of parental, teacher and peer stimulation as it effects subjects' achievement. In the remaining two studies also the groups are formed on the basis of creativity or intelligence. In the present investigation, groups based on talentedness are compared with one another in respect of parental, teacher and peer stimulation in academic achievement.

In an investigation 'Identification Patterns, Motivation and School Achievement of Bright Junior High School Boys', Ringness (36) examined the identification with father and teachers, motivation, values and peer relationship of 261 bright boys with an IQ of 116 or above

studying in eighth grade. The sample was divided into groups of 88 high, 85 average and 88 low achievers on the basis of Grade Point Average (GPA) and score on the Iowa Test of Basic Skills.

The data were gathered by structured interview with subjects and a rectangular card sort. The structured interview consisted of 55 questions tapping areas of occupational ambitions, identification with father and teachers, acceptance of school values, peer relationship, peer attitudes toward school marks and work. A rectangular card sort assessed dimension of pupil self-report concerning independent and non-conformity behaviour, motivation to affiliate with peers and to achieve academically. The significance of differences between groups of achievers was tested by using chi-square. The major findings were as under :

(1) Most subjects identified well with their fathers and with teachers.

(2) They perceived school as a place one attends for vocational purpose, however, high achievers more than others saw school as a place to develop one's talent.

(3) Scholarship was shown to have little relationship to peer popularity.

(4) Popularity seemed to result from possession of a pleasing personality; athletic proness, scholarship and other attributes may supplement such personal qualities; but they themselves were not conducive to peer acceptance.

(5) Low achievers were found more motivated than others to affiliate with peers. High achievers were found more motivated academically than others.

(6) High achievers were found more independent and autonomous than low achievers, whereas low achievers were found more non-confirming than others.

(7) School was seen by most subjects as demanding conformity and most of the subjects accepted this role model.

In another study Ringness (37) took a sample of 267 eighth grade bright girls with a mean IQ of 114.3 from 13 public schools with a view to examine the subjects' degree of identification with parents, teachers, peers and to assess school achievement values attributed by the subjects to each identifying model. In turn, relationships to subjects' own achievement values and to actual achievement were also examined. This study in addition to relating achievement motivation to achievement, was also concerned with determining relevant identification and modelling variables which might account for achievement differences.

Identification with models and achievement values attributed to them by subjects were assessed by the School Attitude Research Inventory. A card sort assessed achievement orientation, peer affiliation, non-conformity and independence orientation. Achievement was assessed on the basis of Grade Point Averages (GPA) and score on the Iowa Test of Basic Skills (ITBS). Achievement was predicted from the California Test of Mental Maturity (CTMM) IQS. Subjects were grouped into equal cells of 89 high, middle and low achievers under prediction. Two predictions were made from GPA and ITBS to determine relationship between identification and value variables to achievement over, at and under prediction.

Correlational and factor analysis substantiated the importance of identification and values of identifying models, and their relationship to subjects' own achievement and actual achievement. The major findings were :

(1) Subjects identified strongly with both parents and with peers but their identification with teacher was found to be low.

(2) Degree of identification with mother was greater than that for father and peers.

(3) The subjects indicated that parents and teachers held high achievement values but achievement values for peers were substantially lower. Thus, adult identifying figures were seen to hold generally higher achievement values than peers.

(4) Subjects' own achievement values were related to the identification of both parents.

(5) Peers value was found to be most closely related to subjects' achievement values.

(6) Subjects' achievement values and academic achievement orientation were found highly related to GPA and ITBS.

(7) Parental identification was found related to teacher identification.

(8) Values of peers and own values were also related to teachers identification and there was a negative relationship to nonconformity.

(9) Peer identification and affiliation were negatively correlated with nonconformity and independence orientation.

(10) There was no significant differences between subjects' achievement orientation and independence orientation.

They were found highly peer oriented, hence not nonconformist.

(11) Own values were strongly related to teacher identification, but teacher identification was not related to achievement itself.

Identification with peers was high, and subjects showed high affiliation orientation, however, it was values held by the peers rather than identification with peers which was most closely related to subjects' achievement values. It was

inferred that subjects tend to associate with peers whose values were most like their own.

In short, parental, teacher and peer identification and values were found related to actual achievement. The prediction studies tended to echo the above findings. Although pupils motivation was related to achievement at,over and under prediction for both ITBS and GPA, the GPA was also related to pupil identification with adults, and to a lack of non-conformity.

Kenneth and others (38) had conducted a study of school attitudes, peer acceptance and personality of creative adolescents. The purpose of this study was to investigate whether there were differences among students of higher, middle and lower creative abilities in terms of the following variables ; peer acceptance, attitude toward school and personality characteristics.

The subjects for this study were 80 boys and 71 girls studying in ninth grade of a centralized school district in New York State, who scored 84th percentile or above. Students were divided into three groups : High, middle and low creative groups. Seven tests were employed to measure creativity.

Social distance of Cunnigham was employed to measure peer acceptance. A sixty item questionnaire developed by Getzels and Jackson was used to measure personality characteristics.

The result indicated that more creative students tended to be more intelligent, adventurous , extroverted and self confident. They have a less favourable attitude toward school. In terms of peer acceptance, sex appeared to be a factor. High creative boys received greater acceptance from peers than less creative boys but more creative girls were less accepted by their classmates.

There was a trend in the direction of a negative relationship between creativity and favourable attitude toward school.

In an investigation entitled 'Anxiety, intelligence and achievement in children of low, average and high intelligence', Feldhusen and Klausmeier (39) examined the interrelationship of anxiety, IQ and school achievement in gifted, average and slow students of the same age level.

Forty children with low IQs of 56 to 81, forty with average IQ of 90 to 110, and forty children with high IQ of 120 to 146 on WISC, divided equally by sex in each group

were used as subjects.

The Children's Manifest Anxiety Scale was used to measure anxiety. Reading, arithmetic and language achievements were measured through the use of California Achievement Battery. The results were analyzed and relation of anxiety to IQ and achievement were discussed. The findings were as follows :

(1) Significantly greater mean anxiety was found in the low IQ group than in the average or high. the difference between latter groups being insignificant.

(2) The correlation between anxiety and IQ was significant in the average group.

(3) Correlations of anxiety with IQ and achievement for both boys and girls were negative and significant.

In short, Feldhusen and Klausmeier found a significant negative correlation between anxiety and IQ.

In another study (40), the behaviour of the same group of children was studied during the progress of solving a series of arithmetic problems. Each child received only one problem at his level of performance; the time spent in solving the problem was not significantly different from that taken by any other group. The gifted group did significantly

better than average group in persisting, in not differing incorrect solutions, in verifyihg their results, and in using a logical approach.

In a third study, (41) relation and transfer were studied. It was found that the groups did not differ from one another.

To sum up, the first study (36) indicates that most subjects identify well with their fathers and teachers. They perceive school as a place one attends for vocational purpose. In the second study (37) in which girls were used as subjects it was found that most of the subjects identify strongly with both parents and with peers but their identification with teacher is found low. Parental, teacher and peer identification and values are related to subjects' own achievement values, which in turn are related to actual achievement. It is also found that subjects tend to associate with peer values are most like their own. In Kenneth's study, there is a negative relationship between creativity and attitudes toward school. Feldhusen and Klausmeier found a negative relationship between IQ and anxiety.

2.2 (C) Studies concerning Academic and Non-academic Accomplishments of Talented Students

In this section the various studies pertaining to the relationship between academic and non-academic forms of talented accomplishment are discussed. The various studies are briefly presented and the main findings are pointed out.

In a series of investigation Holland, Richard and others (42 - 47) made a careful distinction between two kinds of talented accomplishments : academic and non-academic. Their findings suggested that academic and non-academic accomplishment were relatively independent dimension of talent.

In one investigation of talented adolescents, Holland (42) distinguished between high school grades and creative performance which had merited public recognition through prizes, awards, publication, invention or other notable performance in arts or science.

Holland utilized a questionnaire which gathered data on various personality and background variables and on 'creative performance'. A sixteen item check-list five dealing with creative

science and eleven with the creative arts was included and students were asked to check the items which applied to them. In addition, the academic achievement of the students was evaluated.

Holland found that students who had merely attained high grades were perserving, social, responsible and often came from families in which the parents held authoritarian values and attitudes. While the students who had done creative performance and received some prizes or awards at high school level were found more frequently a social, intellectual, independent, consciously original, high aspiration for future achievement and more expressive than high academic achievers. He discovered that creative students were more independent and asocial compared with high academic achievers who were more responsible.

Holland's finding on the Merit Scholarship finalists suggested that academic achievement rather than creativity was related to socialization and perseverance.

In another study Holland and Richards (43) examined the relationship between academic achievement and non-academic performance on a population with a broad range of talent. The population consisted of 7262 college freshmen,

of whom 3770 were boys and 3492 were girls, enrolled in twenty four colleges.

Academic accomplishment was assessed by means of average high school grades and by scores on test of academic potential; whereas non-academic accomplishment was assessed by American College Survey Test (ACT) battery and by a check list of extracurricular accomplishment. The American College Survey was scored to yield 18 scales to assess a student's non-academic achievement in high school, competences, originality and acquience. A check list of extracurricular accomplishment for the high school was also used to obtain scores in the following area: art, music, literature, dramatic arts, leadership and science. The students indicated whether they had made a particular criterion of public recognition for a given type of talented activity - such as winning an award in a state or regional debating contest.

The students scores for serval scales of extracurricular achievement, the students scores for several academic achievements and students average grades were correlated. The intercorrelation between these academic and nonacademic accomplishments were generally negligible. The low correlation coefficient found by Holland and Richards study reflect the

point that most studies fail to show non-academic accomplishments regardness of their degree of academic achievement. The result strongly suggested that talented nonacademic accomplishment were found relatively independent of academic achievement.

In the work by Holland (40); Holland and Astin (44) ; Holland and Nichols (45); Holland and Richards (43, 46); Richards, Holland and Lutz (47); numerous demonstrations have been provided showing the substantial contrast between the students who excel at academic achievement and the students who excel at various types of talented attainments demonstrated outside the school routine. This work also found that excellence at talented nonaccomplishments maintained itself over time, in the sense that students who demonstrated strong attainment of these kinds during high school are more likely to exhibit the same kind of accomplishment during college (47).

Wallach and Wing (48) conducted an extensive creativity-intelligence research and reported in the volume 'Talented Students'. They reported an investigation of talented accomplishments outside the classroom during the high school years and what they seem to imply about cognitive process.

The sample of 503 subjects included 302 male subjects and 201 female subjects. Intelligence was measured in a very conventional manner by using respondents' scores on the verbal and mathematical parts of the Scholastic Aptitude Test (SAT). Sex difference was found in SAT scores. On the basis of SAT scores the subjects were divided into high and low intelligence groups. The scores were used for predicting how well a student may be expected to do in his college grades.

Non-academic accomplishments outside the classroom were classified as those which did not earn grade credits such as signs of leadership, signs of talent in visual arts, signs of expertise in literary activities, competence at extracurricular enterprizes in the field of science, a sign of accomplishment in music, play and the like.

Two ways of probing the academic accomplishment levels of students were utilized. Examination of their academic performance in high school and their academic performance during the freshmen' year of college. The student academic achievement was evaluated by assessing his class marks, position, expressed in relation to the size of his class.

Level of academic achievement in college as well as in high school, therefore, provided clear validating evidence to the distinction between high and low group in the sample. High intelligence was linked with the achievement of high grades. Intelligence level was strongly related to grades.

In this research, tested intelligence was found substantially related to academic achievement, but not to any of a variety of lines of talented endeavor pursued outside the classroom - including fields of arts, science, projects, and political leadership. On the other hand, assessments tapping the students' resourcefulness in generating ideas proved to be related to those talent domains that involve production skills - for instance, writing stories or painting pictures - and again quite independent of tested intelligence. Thus, talented non-academic accomplishments were found to be fully independent of intelligence test scores. Intelligence was not at all related to the level or quality of achievement in any of the forms of extracurricular activities studied. Performance on the measures of creativity or ideational resourcefulness however, were unrelated to grades but strongly related to non-academic achievements, especially those in which

innovation plays a major role.

In an investigation entitled 'The Many Faces of Intelligence' Werts (49) examined the relation between high school grade average and various types of extracurricular talent displayed by 1,27,125 college freshmen during high school. There were 76015 boys and 51110 girls as subjects.

Along with registration forms, each student was asked to fill out another form of 18 talent items about his extra-curricular achievement. Each student responses to 18 items were categorized into a some versus non dichotomy. The achievement items, used here were similar to those used by Holland and Richards. There were seven possible areas of achievement: science, drama, literary,leadership, speech, music and arts areas.

In these seven areas, the percentage of achievers was greater among students with high grades than among students with low grades in high schools. Students with high grades usually won recognition in several of these extracurricular areas, whereas majority of students with low grades did not show any extracurricular activities. A multiple correlation of .38 for boys and .37 for girls were obtained between the 18 achievement items and high school grades.

Werts in a critique of the Holland and Richard work, proposed that due to statistical artifacts, the actual degree of relationship between academic and nonacademic accomplishments was greater than the latter believed. He concluded that heavy reliance on high school grades in selection would result in no great loss of students with other kind of talent.

In a reply to Werts Holland and Richards (46) retabled the Werts' data and showed that grades were inefficient way to select for nonacademic talents and have little relationship with other talents. The selection of only A+ or A grade students will result in the elimination of 74 to 93 percent of all students with various kinds of non-intellectual accomplishments.

Thus, they showed that academic accomplishment is still an inefficient predictor of nonacademic accomplishment.

In a study, Getzels and Jackson (50) investigated the traits of high school youth who showed signs of high creativity. Two distinct groups - one high IQ group of 28 students, the other high creativity group of 26 students - were selected from a group of about 500 students on the basis of IQ measures and creativity measures. The

mean IQ of high IQ group was 150 who scored in the top twenty percent of the total on IQ measures but they were low in creativity as measured by Guilford's Creativity Tests. The high creativity group had a mean IQ of 127 but were in the top twenty percent in creativity. Both groups were equally superior on standardized verbal and mathematical achievement tests. Teachers showed a clear-cut preference for the high IQ group.

The groups differed in preferred characteristics: The high IQ group favoured high marks, pep and energy, character, and goal directedness and desired to possess now those qualities which will lead to success in adult life. They tended to converge upon stereotyped meaning,to move toward the model provided by teachers and to perceive personal success by conventional standards. By contrast, the high creativity group tended to diverge from stereotyped meaning, to move away from the model provided by teachers. The high creative group favoured a wide range of interests, emotional stability, and placed a higher value on sense of humor.

They suggested that unless conventional identification procedures are supplemented by measures of creativity, a group of truly gifted youth to produce novelty in the learning

process as well as remembrance of course content will have been missed.

Torrance (51) reported seven or eight replications with population varying in age and ability distribution. Most of the conclusions were very similar to those reached by Getzels and Jackson.

Using a sixth-grade population selected as high (in the top quartile) on either, both, or neither IQ nor creativity, Flescher (52) studied the relative contribution of 'creativity' and 'intelligence' to academic achievement. Unlike Getzels and Jackson, Flescher found that IQ made a significant difference in all areas of academic performance while scores on the 'creativity' battery made no difference on any of them. Neither was the interaction of intelligence and creativity significant for achievement in any school subject. As have other researchers, Flescher found little relationship among the various sub-tests of creativity battery. An assessment of general anxiety and test anxiety found was neither significantly related to intelligence nor to creativity. The correlations between the anxiety scores and academic achievement were, in general negative.

In a study Lucito (53) compared a group of 55 bright children of sixth grades with 51 dull students of the same grade on an Asch-type task taking independence conformity behaviour. The total IQ score on the California Test of Mental Maturity (CTMM) was used to place the children into two categories - bright and dull. Inclusion in the bright group required a Z score + 1.25 (IQ of 120) or above; for the dull category Z score - 1.125 (IQ of 82) or below was required. There were 26 girls in the dull group and 22 girls in bright group.

The students were grouped into competitive terms of six students each. Each students' major task was to discriminate relative length of three lines. Two white cards, the card on the left had one line, the standard; the card on the right had three choice lines, were presented simultaneously. False information was fed to the subject about the performance of the other members of high group, and he was faced with a decision as to whether to trust his own senses or conform to the group decision. The findings were :

As predicted, the bright children as a group were less conforming on both difficult and easy tasks to their peers than the dull children into the total independence -

conformity situation. The bright students were significantly more independent in their decisions than were the dull.

In sum, the importance of various non-intellective factors in the fulfillment of intellectual promise has been recognized since long. There is no doubt that intelligence is of great importance as a basis for predicting a pupils competence in school. In the work of Holland, Richards and others (42 to 47), it is revealed that academic and non-academics forms of talented accomplishments are minimally related to one another, and this they have documented in various ways. In the Wallach and Wing (48) research, intelligence is indicator of academic grades, but it is irrelevant to display any of the forms of extra-curricular accomplishments. Thus, differences in intelligence are not associated with meaningful talented accomplishments. The lack of relationship between intelligence and creativity is revealed in the study conducted by Getzels (50) and Jackson. In the Lucito (5) study bright students tended to be independent in their decision.

CHAPTER 2

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