

PART ONE

INTRODUCTORY

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CHAPTER I

INTRODUCTION TO THE PROBLEM AND THE RELATED CONCEPTS

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1.0 INTRODUCTION

The problems of the bright and the dull have puzzled the people all over the world of education. In India, these problems have achieved special significance. Every one, who is in touch with our schools, whether primary or secondary, has noticed that all students do not respond favourably to equal opportunities. Pupils who are weak or slow in learning are generally penalized or held back in the class. At the end of the year they fail and repeat grade after grade. In face of education being compulsory more and more children are enrolled in the schools and thus this problem of failure or wastage in case of weak, backward or slow learning pupils becomes acute. Day by day this problem has become so much striking that it has attracted the attention of teachers, principals, educationists

and parents. Similarly, the bright children in a sense pass through the same condition as the slow learners, but the difference is that they are at the other end of the same problem. The bright children are forced to remain with the class and generally they have to move in the school with their superior abilities unrecognized and unchallenged or often unused and lost, like many a gem lying dormant or undiscovered in the unfathomable sea.

Under the prevailing conditions in schools both weak and bright pupils are neglected. This neglect has become conspicuous at every stage of educational system. However, even in the midst of this state of affairs, luckily some bright children do make tangible progress. A number of studies regarding successful persons in life have shown that their abilities and needs are recognised and opportunities were provided for, by their parents and teachers during the early period of their childhood. The gifted constitute the real wealth of the society and the nation, and the country cannot afford to lose this wealth. Early identification and adequate encouragement of such gifted brighter children are more important and essential prerequisites to success. Any indifference to the gifted children is even more serious than the neglect of the

backward. It is the responsibility of teachers to detect and utilize the talent and ability that rot for lack of stimulation. The present educational system must be reorganised in such a way that it should provide for all sorts of opportunities to bright students for the fullest development of their potentialities and abilities. Those who are in the field of education and research must discover the ways of identification of the gifted and means of encouragement and motivation for these children to develop, express and utilize their unusual gifts. Not only the teachers, but also the parents too should extend their hand of co-operation in this huge task in their own way. In these situations the schools have greater responsibility as well as unique opportunities to develop our youths in accordance with their potentiality and promise. In other words, the problem of studying the gifted, the brighter, or the creative has assumed greater importance and demands serious attention of all educators and researchers.

Our schools seem to work on a mass production scale. They trade with lakhs of students and crores of rupees. No doubt the education of the masses on a mass scale is necessary for the welfare of our still developing country, but progress in all areas of life depends upon the vision

and insight of a few creative able persons. In the run of our democratic ideas about giving all sorts of opportunities to all the citizens of India, we must not forget to make adequate provision for those who can definitely contribute towards still greater improvement in our society. There are many evidences that we neglect our greatest resource, the gifted children and youths. This resource needs to be preserved and developed in the interest of our future contribution to the progress and welfare of our country. The gifted pupils of today are the innovators and creators of the better and brighter future. In a developing country like India we must utilize more effectively our highly gifted citizens towards achieving our goals. It is a fact that if a person has no vision, he will perish. To promote human welfare, this type of vision is necessary and this vision comes from our gifted boys and girls. Therefore, it is vitally important to educate these pupils for worthwhile leadership and democracy. It is our experience that our gifted children are cruelly neglected. If we want to reap the fruits of democracy in its richest sense, we must recognize the full range of ability within our total population and that can be done by offering adequate opportunities for the maximum growth of every child and youth, and specifically the gifted and talented boys and

girls. By developing their gifts we can use their abilities constructively in the interest of our democratic country. Recognizing and conserving giftedness will lead to emergence of capable leaders in all fields such as art, music, science, technology, industry and education. A more effective democratic society can be realised if we help gifted and talented children to find their due places in the home, in the school and in the community.

In view of the importance of the problem to study the gifted in relation to their different characteristics, especially creativity and some personality traits, it is fair, first, to clarify the important concepts of giftedness, creativity and personality, as used in the present investigation. The rest of the pages are devoted to the discussion of these important concepts.

1.1 CONCEPT OF GIFTEDNESS

There are two different concepts prevailing about intellectual giftedness. One view holds that possession of a high level of general intelligence as measured by traditional tests is characterized as giftedness. Others view that giftedness is described as the possession of special abilities of a high order which are not necessarily

associated with a high intelligent quotient. If we combine these two viewpoints about giftedness, then giftedness means the possession of a high order of general intelligence as measured by traditional tests as well as the possession of special abilities of a high level, which are not necessarily associated with a high intelligent quotient. The exhibition of special abilities may be in such areas as art, music, mechanics, science and technology, social relations, leadership, organization etc. This view of giftedness, i.e. being equipped with high order of general intelligence as well as one of special abilities is a more practical, useful one and is accepted operationally in the present study. As these different forms or areas in which giftedness can reveal itself, it is impossible to find a person possessing all these abilities. It can be conveniently said that different persons are gifted in different areas. For the detection of gifted persons, the development of tools measuring general intelligence as well as different abilities is important and necessary.

1.2 THE GIFTED CHILDREN

In this field, much credit goes to the work of psychologists who attempted to identify and study the gifted

children. In the earlier studies, giftedness was associated with high order of intelligence, and thus, gifted children were located by using an intelligence test. Nowadays, the concept of giftedness has been expanded, specifically stressing special abilities as mentioned above, and thus other types of gifted children, i.e. creative, talented in special fields are included.

In the present age of democracy, we, not only gear our educational programme for all, but also cannot afford to be satisfied with giving equal opportunities to the gifted in line with all others, because it is the group of the gifted that are going to be pillars of society and real builders of democracy. We are particularly interested in furthering educational opportunities for gifted children and youth. Equal opportunities do not mean same opportunities to all, but opportunities equal to the abilities possessed to meet with natural endowment of the individual differences. We should not give too less or too much, which means wastage, but give what is needed maximally. Our activities should be such that they meet the demands of these gifted children, that their potentialities are utilized optimally. The implications of such thinking in education are that we should aim at :

1. Understanding the nature of giftedness and identifying the gifted children and youth from amongst the mass of students.
2. An improvised curricula in our present school system, with special educational opportunities for the gifted.
3. Providing efficient organization and able teachers.
4. A conducive relationship between parents and teachers.

Thus, we now refer ourselves to the concept of giftedness which has been discussed in the previous paragraphs. The concept of giftedness includes intellectual superiority as well as special ability or talent in other fields which may not necessarily involve intellectual superiority. Thus, the gifted child is the one who exhibits superiority in general intelligence and who is in possession of special abilities of high level in the fields which are not necessarily associated with high intelligent quotient.

The above definition includes many factors including environment which plays an important role in developing certain abilities. Hollingworth⁽⁵⁵⁾ has defined the gifted thus. For her own experimental work, she defined the gifted as children who are in the top 1 per cent of the juvenile population in general intelligence. She held the

view that general intelligence is the power to achieve literacy and to deal with its abstract knowledge and symbols. She has been convinced that with this power of general intelligence nearly all mental abilities are positively correlated, and that upon it success in scholastic work primarily depends.

Professor Hollingworth stated that her definition of an intellectually gifted child as one standing within the top centile was 'quite arbitrary' and added, ' We could just as well choose the top two per cent to be called gifted or the top one half of one per cent.' Her foresight in recognizing, that this definition of the intellectually gifted was arbitrary, has been shown in the later educational provisions for the intellectually superior in New York City, where there has been considerable irregularity in placing the percentage boundaries. Children in the top 2 per cent of the school population are now eligible for placement in special classes if they meet other qualifications.

The present investigator feels that the gifted is not merely highly intelligent, but should also express or reveal his intelligence in high achievement or performance.

Studies have revealed that though intelligence and achievement are different abilities (the former being innate and the latter being acquired), intelligence is measured mostly through its manifestation in achievement, and that is why there is high correlation between intelligence and achievement. Thus, usually intellectually gifted children are high achievers also. It should be noted at the same time that low intelligence cannot go with high achievement, unless there is some unfair manipulation or play of crooked means. However, it often happens that the gifted or highly intelligent are impeded in their performance or achievement to some extent by some other environmental factors or interfering conditions, and thus their performance may be, though not high, somewhat medium or even low. Such persons can be termed educationally retarded. For his experimental study, the present investigator defines the gifted children operationally as those who possess intelligence quotient of 120 or above as measured by the standard intelligence test.

1.3. IDENTIFICATION OF THE GIFTED

From the above discussion on giftedness taking into account both intelligence and its expression into achievement,

we can have comparatively the following possible categories of combinations of different levels of intelligence and achievement.

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|---|--|
| 1. High intelligence
(120 I.Q. and above) | - High achievement
(Above 60 per cent marks -
first class students) |
| 2. High intelligence
(120 I.Q. and above) | - Medium achievement
(50 to 60 per cent marks -
second class students) |
| 3. High intelligence
(120 I.Q. and above) | - Low achievement
(Below 50 per cent marks - just
passing or failures) |
| 4. Medium intelligence
(90 I.Q. to 120 I.Q.) | - Medium achievement |
| 5. Medium intelligence
(90 I.Q. to 120 I.Q.) | - Low achievement |
| 6. Low intelligence
(Below 90 I.Q.) | - Low achievement |

Both categories No.1 and 2 are in the present study treated as the gifted children. Children of category No.1, viz. children with I.Q. above 120 and with above 60 per cent marks in school subjects are functionally manifesting giftedness and No.2 viz. children with I.Q. 120 and above and with medium achievement are capably gifted, yet to manifest or reach the optimum level. Usually, there cannot be children of category 3 unless much retarded by environmental factors. Categories No. 4 and 5 reflect majority of the group, though No. 6 is again retarded somewhat. Category No. 6 forms the deficient group, difficult to be educated.

Psychologists and educationists should provide special programme to category No.1 and also No.2, being gifted. They should also diagnose the interfering factors in case of children in category^{es}₁ No.2,3 and 5 who are educationally retarded, i.e. do not achieve what they are capable of, i.e. who achieve just below what their intelligence would enable them to achieve. The present investigator locates all capably gifted children, category No.1 and 2, viz. functionally manifest gifted and nonmanifest gifted, and studies them in relation to their creativity and personality.

Throughout history, the historian has observed giftedness in different forms in different groups. Giftedness in workers has contributed immensely to the progress at every time and in every place. Still, it is a power to be discovered and to be developed.

Plato was the first person who argued for the location of the able persons to play^a_^ role of guardians of an ideal kingdom. We should observe them from their childhood. The first step in the identification of the gifted children is to discover their intelligent quotients as measured by the traditional intelligent tests. Even in early childhood, we

are able to know the mental level of a child and for that we are thankful to psychologists who have contributed to education during the last hundred years. It is very much important to identify gifted children as early as possible in their early life, because they face numerous problems to use intelligence, before they attain the age of twelve. After this age they have problems, but they are less in number and at the same time they use their intelligence independently in achieving their control over situations. During primary education - a gifted child requires an additional help to develop his own potentiality. The reliable and valid intelligent test is the most important single tool in the hands of a competent psychologist for the identification of the gifted and talented children. No other tool is as competent as intelligence test in the survey of the gifted children. From the intelligent quotient of the child one can predict precisely the future achievement or the success in school and in the life. Mostly the intelligence test works as the test of educability of the child. Thus, test of intelligence is the tool for selecting children for special educational provisions. In the past when such mental tests were not available, the financial position of parents was

solely the determining factor for the educational advantages of the child.

We have mentioned earlier that giftedness is said to include both high intelligence and high achievement. However, achievement is itself highly correlated with or is an index of intelligence under normal conditions. Hence, truly it is high intelligence that can be equated with giftedness or talent. But as remarked, it often happens that intelligence is not revealed in performance or achievement or expression due to its being inhibited by a variety of factors. Thus, though intelligent, a child may be educationally retarded. Hence for the purpose of the present study, giftedness is associated with intelligence which is functionally expressed through a variety of indices such as high level of achievement, behaviour maturity, etc. as observed by others.

From above discussion one should not mean that the intelligent quotient is the whole and sole criterion to select the gifted child. Physical and emotional maturity are also other factors to be considered. We should also take into account the opinions of those constantly associated with child's education, i.e., principals, and teachers. The results of interview with the child and parent are also equally important in the process of search of the gifted or

the talented.

There are many other factors which play an important role in the identification whether a particular child is gifted or not, besides his intelligent quotient and scores in achievement. Among these factors not only intellectual, but also physical, emotional and social characteristics of behaviour are important. In deciding these factors, continuous observation of a child in varying situations is necessary. For the development of a well-balanced personality of a gifted child, a programme should include activities such that it provides opportunities for the expression, and the development of his gifts and fulfils his physical, social and emotional needs. A gifted child shows continuous progress in his areas of interests. Compared to a child of his age and cultural background, the gifted child shows the capacity for creating and developing activities which are exceptional.

1.4 TOOLS FOR IDENTIFICATION OF THE GIFTED

Some of the tools that can assist in locating the gifted are described below :

(a) Mental Tests :

Intelligence tests measure the innate ability of an individual to acquire, arrange and use facts precisely. From the knowledge of an intelligent quotient of an individual

one can predict his mental abilities and performance in a particular task which requires the use of intelligence. From intelligence scores of a child we hardly get the clue about other activities such as initiative, creativeness and intellectual curiosity. Though the intelligence tests will not always and necessarily pick out the gifted and talented children, it is one of the most effective instruments nowadays available for selecting such children.

(b) Aptitude Tests :

By using general intelligence tests we seldom know about the abilities of gifted children in the areas such as art, music, drama, mechanics or language, etc. For measuring abilities in these areas the aptitude tests are available. Thus, the scores of children on these tests throw light on nature of these abilities.

(c) Reports of Parents :

The parents have the intimate knowledge of their childrens' behaviour. They give information regarding quick understanding, unsatisfied curiosity, extensive information, retentive memory, large vocabulary, unusual interests and special phenomena such as early walking, talking and reading without training. These are also the symptoms of giftedness. Often such reports are subjective and sometimes they are

full of exaggeration and bias, yet these reports of parents who are constantly observing their children are of considerable value in locating likely gifted children who will then be identified by other tools.

(d) Reports of Teachers :

Perhaps, teachers being more acquainted with the formal education of their pupils are better judges than parents. Still teachers fail in identifying gifted children because of their poor ways of evaluating the children. They rely mostly upon school achievement and sometimes overlook the factor of chronological age. Often their biased nature and poor knowledge of the children come in the way of adequate evaluation of the gifted children. They are also led away by halo effect in judgment. In spite of all these weaknesses of teachers, their reports about the children are of much help in identifying gifted children.

(e) School Accomplishment and Standard Achievement Tests :

It is a general opinion that superior accomplishment in school is the proof of outstanding ability or giftedness of children, since it is also an index of superior intelligence. But really this is not true always, because school achievement is often inaccurately evaluated. We may find large discrepancies between school marks and scores on

reliable and valid achievement tests. In fact, standard achievement tests identify gifted children better than school achievement marks. Thus, standard achievement tests have a real place in the identification programme of gifted and talented children.

1.5 SOME MISCONCEPTIONS REGARDING THE GIFTED

Often people talk of gifted or talented individuals, basing their opinion on unscientific observations or physiological marks as reported in folklore. A number of symptoms have been quoted as indices of talent, wrongly associated with the highly gifted children. Such associations add simply to misconceptions about giftedness. A few are given below :

For example, it is believed that the gifted possess :

1. Nearsighted eyes peering through thick lensed spectacles,
2. Bulging foreheads,
3. Flat chests,
4. Spindly arms and legs, or
5. Laughable social perplexity.

There is also a strong belief that the gifted children are emotionally unstable and everyone predicts dreadful future for them. Such belief has its origin in the early history of philosophy and psychology. If we study the

childhood of great men and women, it is often associated with academic feats and other sorts of wonder. Whatever may be the reasons, there is still prevailing much misunderstanding regarding the nature of the gifted children.

Research studies have been done to disprove such misconceptions regarding gifted and talented boys and girls. In the next section of this chapter the investigator has tried to amass some research findings on general characteristics of the gifted children.

1.6 THE CHARACTERISTICS OF THE GIFTED CHILDREN

Lewis M. Terman⁽¹⁰⁴⁾ was the first to identify a large group of gifted children and study their mental and physical development, family background, socio-economic status and educational achievements. It was generally believed that gifted children were somewhat queer, unstable and erratic. Other writers have also pointed out that they are puny, weak, stoop-shouldered and pathetic-looking. Following is the summary of findings on the general characteristics of gifted children, based on research studies⁽⁸⁰⁾.

1. Gifted children are generally physically attractive and also have sound physical health.
2. The gifted are generally superior in educational development.
3. They have good command over language and have extensive reading as well. They read speedily and with greater comprehension.

4. They have more intellectual power.
5. They are alert and quick and have a longer attention span.
6. They solve problems by insight method and are able to generalize more easily.
7. They have a great curiosity, a good memory, a large fluid vocabulary and ability to interpret data.
8. Gifted children are usually versatile, creative and original.
9. They are friendly and outspoken.
10. They are self critical and are able to make logical evaluation of their work..
11. The majority of the gifted children are emotionally well-adjusted.
12. They are socially acceptable by almost all the members of the society.
13. They are generally not interested in classroom activities. They never participate in group discussion in school.
14. They will be found inattentive and at times talking in the class.
15. They are occasionally rude towards teachers.
16. If the school cannot provide proper education to them, they are likely to turn out truants.
17. A number of studies also observe that most of the delinquents are very intelligent.

It should be noted here that these are the characteristics of gifted children specifically studied by the authors concerned; at the same time it should not be construed that those who possess such characteristics are always the gifted.

1.7 THE TEACHER OF THE GIFTED

It is also observed by many that teacher has the greatest influence on the development of the gifted children. The effective teacher of the gifted children is that person who is liked and wanted by them. Paul Witty⁽¹²⁵⁾ made intensive study of the characteristics of the effective teacher of the gifted children. The ideal teacher for the gifted is described as one who possesses knowledge of his own subject, or other related subjects and of the world. A benevolent disposition, good health, pleasing appearance and a genuine and earnest sympathy for the young are the traits of the successful teacher. Witty analysed the following traits in order of frequency from his research work on characteristics of effective teachers. The responses for this were given by fourteen thousand pupils. The teacher of gifted children should possess the following traits :

1. Co-operative, democratic attitude
2. Kindliness and consideration for the individual
3. Patience
4. Wide interests

5. Pleasing personal appearance and manners.
6. Fairness and impartiality
7. Sense of humour
8. Good disposition and consistent behaviour
9. Interest in pupils' problems
10. Flexibility
11. Use of recognition and praise
12. Unusual proficiency in teaching a particular subject.

Winding up the discussion on the concept of giftedness, let us turn our attention to the next, related concept of creativity in the present study.

1.8. CONCEPT OF CREATIVITY

In the twentieth century there is an intellectual competition among men and women. In this intellectual competition creativity is one of the most important factors for the run. From the beginning of this century, creativity has become a topic of interest to psychologists, educationists including teachers as well as principals, and also to parents and the public. In view of this, nowadays a number of researches have been undertaken in this area of creativity.

Sometimes a sort of confusion arises between creativity and productivity. Creativity implies high quality of a

particular kind while productivity implies quantity. Creativity is a unique, novel, divergent product rather than a conventional, routine one. Creativity often strikes or takes you aback; productivity runs normal. There are research findings which show that creativity and productivity overlap each other to a limited degree, since both include a large number of responses; creativity includes a large number of responses all of which may be varied, while productivity may include a large number of same type of responses. Thus, creativity also means variety, besides novelty, originality or uniqueness. Creativity is represented in achievement in a variety of ways, since it is not unitary. Various intellectual and nonintellectual test scores hardly predict creativity.

Similarly, creativity can be distinguished from giftedness in a sense that giftedness is the power and creativity is the product or result. It is assumed that both go hand in hand usually, though not necessarily. The gifted can be static; the creative are always dynamic. Usually, the gifted persons tend to achieve high or express themselves in creativeness of high level but sometimes people are creative, imaginative artists, sculptors, composers and so on in one field or the other, and yet may

not be gifted with high power of general ability or intelligence. Creativity uses more of imagination; giftedness pertakes more of intelligence. It is worth studying, how giftedness and creativity ^{are} related. The study of such relation forms a part of the problem of the present investigation.

Some believe that creativity props up during the adolescent period as a complex product of various factors of inheritance and life history. Today researches in this area attempt to recognize and measure the major internal and external variables which lead towards or away from creative activity. The practical aim of the researches is to identify the children in their early life who have greatest potential for creative performance. In this way one can set the stage so that in later life the creative process in its extreme form can occur in the individual. Nowadays among researchers the assumption prevails that all persons have some creative potential but there are differences in degree.

Lowenfield⁽⁶⁶⁾ distinguished between actual creativity and potential creativity, the former being that potential which is already developed and is functioning, the later including the total creative potential (both developed and undeveloped) within an individual. Thus, each man has some degree of potential to be creative in one or more ways. The

creativity appears at all ages, in all cultures and fields of human work though there are natural differences in the frequency, level and type of creativity. Creativity should appear generally in all human activities. It is not limited to certain fields, such as arts and sciences. There is a distinction between the creative product and creative process. The assessment of the product is much more important and acceptable for several reasons than the assessment of the process. One reason is that the product is far more tangible. There are no adequate tools which identify the highest type and level of creativity. We are also not sure about the long range effects of education, training programmes and environmental influences on the development and stimulation of creative potential. We, yet, attempt to construct valid and reliable instruments to measure creativity and to evaluate the effects of training and environment on creativity. To develop valid criteria for such evaluation, is the most crucial problem at present. From test scores, only future creative performance can be predicted. Researchers should focus their attention on criterion problem. It is more necessary now to increase our effort to learn more about creative talent and to develop it in science and elsewhere.

1.9. IMPORTANCE OF CREATIVITY

Creativity has its significance in different nations and also in various areas of knowledge. It has its value in society and also for the progress of science. If any nation identifies her best persons, develops and encourages them, it will gain her higher position compared to other countries. Today our means of transport and communication, varieties of production in industries and development in various fields are the fruits of creative people though they are few. Creativity has played an important role in changing history and in reshaping the nations. Society can only be changed easily and radically by creative people. They have helped to improve knowledge, to win the unknown, to produce new ideas and useful things and to secure a huge production of material goods. Our country falls behind for want of able persons in sciences and engineering. If we want to stand with other nations of the world, we must focus our attention to encourage, to support, to identify and to develop creativity in various fields. It plays both ways. Can we not say that the destruction in the war in its real sense is due to the highly creative persons? On the other side it is also true that the vast improvement which we see today in all areas of progress, is due to the same creative persons who developed the destructive weapons for

the war. Creativity is one of the abilities of man, which opens the doors of progress in various fields of activity. It will be a real and better investment, if we spend our funds on the problem of identifying and nurturing creative talent. The real, current picture of our country today is that, crores of rupees are spent every year for development of industries, but hardly a small percentage of such amount is spent for research on how to identify, develop and encourage gifted or creative children who are in the base of future progress of the country. Those in the field of psychology or education are concerned mainly about assessing and guiding the growth of creative thinking abilities chiefly in view of the following considerations :

1. Psychologists are more concerned with the creative to help them, to avoid mental breakdown and to achieve healthy personality growth.
2. One of the aims of education is to develop the children into fully functioning persons, so that the creative abilities of the children cannot be ignored, remain undeveloped or paralyzed.
3. The creative thinking abilities contribute mainly to the acquisition of information and various educational skills.
4. Creative thinking plays an important role in educational achievement.

5. Mere possession of high intelligence, special talent and technical skills is not enough for vocational success, since success depends upon creativity also - a distinguishing characteristic of person.
6. The creative persons are the real contributors to the progress of the society. The future of our civilization depends upon the creative abilities of our generation. Democracies will wither if they fail to use intelligent, imaginative methods for solving their problems. For this we have to identify, develop and encourage our creative children and youth.
7. We have to guide our creative talents towards the contribution of creative growth in a variety of ways and fields.

E. Paul Torrance⁽¹¹⁰⁾ stated that guidance workers are in a unique position to encourage creative talent by providing a highly creative child with a refuge from vicious attacks by the world, by being a sponsor or patron, by helping him to understand and accept his divergence, by letting him communicate his ideas, by seeing that his creative talent is recognized, and by helping parents and teachers understand him.

1.10 VIEWS OF GUILFORD ON CREATIVITY

Guilford⁽⁴⁸⁾ believes that each intellectual component or factor is a unique ability that is needed to do well in

a certain class of tasks or tests. He identifies some 50 separate factors which he arranges in a three-dimensional model called ' the structure of intellect '. On one dimension are arrayed four classes of intellectual content with which one may work : figural, symbolic, semantic and behavioural or social. The second dimension is defined by five kinds of operation performed: evaluation, convergent thinking, divergent thinking, memorization and cognition. When a ~~certain~~ operation is applied to a certain kind of content, as many as six general kinds of product may be involved. These six products constitute the third dimension; units, classes, relations, systems, transformations and implications. This model with three axes divided, respectively, into four, five and six segments, includes 120 spaces or cells. According to Guilford there should be a factor for each cell. Not all have been found, but he has identified fifty. To complicate the matter, however, some of the 120 cells contain more than one factor and so he concludes that we may end up with more than 120 abilities each of which would be a unique ability.

Guilford⁽⁴⁵⁾ defines creativity as the abilities that are most characteristic of creative people. Creative abilities determine whether the individual has the power to

exhibit creative behaviour to a noteworthy degree. He does not define his terminology for the sake of semantics or in the traditional fashion. His definitions and interpretations of terms are of operational nature.

The first major experimental attempt which showed that creativity is a function of the intellect was that of Guilford. In his monumental work on the structure of the intellect, Guilford was able to demonstrate 'divergent thinking' as one of the most important intellectual operations by which the 'product' or end result in the thinking process is reached. The other general areas in mental operations which he discussed were cognition, memory, evaluation and convergent thinking. Guilford defines 'divergent thinking' as a kind of mental operation in which we think in different directions, sometimes searching, sometimes seeking variety. Unlike 'convergent production' where the information leads to one right answer or to a recognized best or conventional answer, divergent production leads to novel responses to situations. The unique feature of divergent production is that a variety of responses are produced. Guilford relates divergent thinking to certain well-known ability factors which seem to go with creative output. At least three such factors are recognized by him, namely, fluency, flexibility and originality, each of which shows itself in particular forms according to the contents

(figural, symbolic, semantic and behavioural) and products (units, classes, relations, systems, transformations, implications) with which it is concerned. Thus, with verbal contents and in terms of the psychological products involved, the basic traits most clearly related to creative thinking include three fluency factors, two flexibility factors and an elaboration factor. The three fluency factors Guilford names as ideational fluency, associational fluency and expressional fluency. Among flexibility factors, he includes 'flexibility with regard to classes of information', the factor first recognized as 'spontaneous flexibility', and 'adaptive flexibility', the first called 'originality' which enables the individual to turn old interpretations of information into new ones. By 'elaboration' Guilford means 'building upon given information to round out a structure, to make it more detailed or to extrapolate in new direction'. Guilford maintains that similar sets of six divergent production factors may be obtained with figural and symbolic information contents, of which five with each of the ^{two} types of content, have already been demonstrated. He points out that it is the relative variety and novelty of the products found in divergent production that link this category of abilities logically with creativity.

1.11 TORRANCES' VIEWS ON CREATIVITY

On the basis of an analysis of the diverse way of defining creativity and the requirements of a definition for keeping a programme of research focused on factors affecting creative growth in context, Torrance defined⁽¹¹⁶⁾ 'creativity as a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses or formulating hypotheses about the deficiencies; testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results.' This definition describes a natural human process. Strong human needs are involved at each stage. If we sense some incompleteness or disharmony, tension is aroused. We are uncomfortable and want to relieve the tension. Since habitual ways of behaving are inadequate, we begin trying to avoid the common place and obvious (but incorrect) solutions by investigating, diagnosing, manipulating and making guesses or estimates. Untill the guesses or hypotheses have been tested, modified and retested, we are still uncomfortable. The tension is unrelieved, however, untill we tell somebody of our discovery.

There are many other reasons for favouring this definition. It enables one to begin defining operationally

the kinds of abilities, mental functioning, and personality characteristics that facilitate or inhibit the process. It provides an approach for specifying the kinds of products that result from the process, the kinds of persons who can engage most successfully in the process, and the conditions that facilitate the process. The definition also seems to be in harmony with historical usage and equally applicable in scientific, artistic, literary, dramatic and intrapersonal creativity. If one accepts the definition of creativity that Torrance has proposed, it becomes possible to recognise creative behaviour, creative thinking abilities and creative potential. From the standpoint of the teacher and counsellor it would seem important to recognise those kinds of potential that make a difference in the way persons should be taught and guided.

Torrance has made deliberate attempts to construct test activities that are models of the creative process, each involving different kinds of thinking and each contributing something unique. Figural and Verbal Tests of Torrance represent a rather sharp departure from the factor type tests developed by Guilford and his associates. Torrance made an attempt to assess the products verbally and figurally that result from these test activities in terms of Guilford's divergent factors (fluency, flexibility, originality and

elaboration). Torrance views them thus :

- Fluency - It reflects the ability to produce large number of ideas with words or figures.
- Flexibility - It represents a person's ability to produce variety of ideas, to shift from one approach to another, or to use a variety of strategies.
- Originality - It represents the subject's ability to produce ideas that are away from the obvious, common place, banal, or established.
- Elaboration - It reflects the subject's ability to develop, embroider, embellish, carry out or otherwise elaborate ideas.

Although creative thinking may manifest itself in other than verbal and figural forms, some of the most important products resulting from the creative thinking process are found in these forms. Torrance is not yet prepared to specify even the range and dimensions of the tasks and products necessary to provide an adequate estimate of a person's creative thinking potential for dealing with figural and verbal material. On the basis of Torrance's analysis of the thinking manifested by scientists, artists, writers and others in making outstanding creative achievement he has tried to assemble batteries of figural and verbal activities that require kinds of thinking analogous to the thinking involved in recognized creative achievements. The present

investigator has followed his thinking regarding creativity and used his tests to measure creativity in the present study.

1.12 SOME DEFINITIONS ON CREATIVITY

We have discussed some aspects of creativity in the preceding pages. The following pages contain a few more aspects or definitions given by other known personalities in this field.

Ghiselin⁽³⁹⁾ proposes that the measure of a creative product is the extent to which it restructures our universe of understanding.

Lacklen⁽⁶⁴⁾ of the Space Agency uses the extent of the area of science that the contribution underlies: the more creative the contribution, the wider its effects.

Sprecher⁽⁹³⁾ is interested in the novelty and the value of scientists' ideas, and in their work habits as well; he is also concerned about differences in opportunity to be creative in different work situations.

The working definition of creativity used by Stein⁽⁹⁴⁾ is that a process is creative when it results in a novel work that is accepted as tenable or useful or satisfactory by a group at some point in time.

Others have argued that we must consider not only

also
social, but individual creativity, the creativeness of the individual who makes for himself something that others unknown to him have made before as well as the creativeness of individuals who produce something new to society or to the world.

The best two definitions from above are those of Ghiselin and Lacklén who have worked for many years on those definitions.

Piers and others⁽⁸⁴⁾ define creativity as the capacity of an individual to avoid the usual routine, conventional ways of thinking and doing things and to produce a quality of ideas and of products which are original, novel or uncommon and which are workable. It must be purposeful and goal directed. It may involve the forming of new patterns and combination of information derived from past experience and transplanting of old relationship.

Simpson⁽⁹¹⁾ defined creative ability as the initiative which one manifests by his power to break away from the usual sequence of thought into an altogether different pattern of thought.

In accepting these kind of definitions of creativity, a variety of kinds of behaviour are included. It is clear

that no single definition has yet been prepared that suits all works in the field.

To sum up, true creativeness fulfils three conditions:

1. It involves a response or an idea that is novel;
2. It must be adaptive i.e., it must serve to solve the problem, fit a situation or accomplish some recognizable goal;
3. True creativeness involves a sustaining of the original insight, an evaluation and elaboration of it, a developing of it to the full.

Creativity from this point of view, is a process extended in time and characterized by originality, adaptiveness and realization.

By operational definition creativity will mean the capacity measured by 'tests of creativity'.

1.13 MEASUREMENT OF CREATIVE THINKING ABILITIES

Efforts to produce instruments for assessing the creative thinking abilities have in one form or another continued since Dearborn⁽²³⁾ first attempted in 1898 to study the imaginative responses of Harvard students to a series of inkblots. A number of different tests were developed between attempts of Dearborn in 1898 and the efforts of Guilford in the late fifties to develop

instruments for the measurement of divergent thinking abilities. Besides inkblots and other projective devices, analogies have been used most frequently to obtain measures of creative thinking abilities of adults. Chassell⁽¹⁷⁾ in 1916 and Elizabeth Andrews⁽³⁾ in 1930 developed a number of different tests similar to those included today in divergent thinking abilities test batteries. Similar efforts continued to be made in the thirties and forties, until Guilford first undertook this task on a systematic and large scale basis in his factor analytic studies of various thinking abilities including creativity. As in all factor studies, the mathematical factors that have been subsumed under divergent thinking abilities are those which seem most related to what is known of the nature of divergent thinking abilities. Thus, we have tests which measure fluency, flexibility, originality, elaboration, sensitivity to problems (the ability to evaluate implications) and redefinition (the ability to define or perceive in a way different from the usual, established or intended way).

There exist verbal as well as non-verbal tests to measure the different manifestations of these abilities.

Tasks or materials that have been used in eliciting creative responses from young children include drawing tests, sample of scribbling, inkblots, imaginative plays, picture tests, verbalizations while painting and standardized problem situations. The kinds of tests for assessing the creative thinking abilities of high school students have been more restricted than those for elementary pupils. Most of the measures are group-administered, use verbal stimuli and require only verbal written responses. Most widely used are Flanagan's Ingenuity Test and a selection from the battery developed by Guilford and also by Torrance.

The present author has used Torrance's procedure to measure creative ability of gifted children under study.

Nothing much is known about the predictive validity of all these different tests. Nor do we know what combination of sub-tests will measure which type of creative talent. The low intercorrelations of tests included in the divergent thinking abilities test battery remind us that we will be advised to use with a great deal of tentativeness the term creativity as applied to any or all of the tests or creative as applied to children selected on the basis of them.

Attempts have also been made to use non-test ways for identifying creative behaviour. It is revealed that the non-test way of identifying creative talent most frequently named by teachers is the use of indicators of behaviour like curiosity, inquisitiveness, investigativeness and penetrating questioning. Other frequently listed non-test indicators include : originality in behaviour (e.g. unusual solutions, unusual answers and unusual approaches to problem solving); independent, individualistic, courageous behaviour; imagination (e.g. fantasy and story telling); non-conforming behaviour (not being bothered by pressures to conformity); unusual perceptiveness of relationship; an overflow of ideas; experimentalism; unusual flexibility in meeting emergencies; unwillingness to give up; constructiveness; day-dreaming and pre-occupation with an idea or problem; and going beyond assigned tasks.

MacKinnon and his group⁽⁶⁸⁾ at the University of California have shown that the most creative architects and scientists are identified by means of interest and temperament inventories. Guilford comments that the informations, thus yielded have concurrent validity; presumably they have predictive validity as well.

This much discussion will be sufficient to understand the concept of creativity. Let us now go to the remaining

of
related concept ^ personality.

1.14 CONCEPT OF PERSONALITY

By mere possession of a large amount of intellectual make-up, i.e., high intelligence and achievement, giftedness and creativeness, one cannot predict about the success in life, which is determined partly also by some non-intellectual factors. A boy of high intelligence may be lacking in tact, while a boy of less intelligence may have these traits. Ability to make practical use of what one possesses, often termed by some as social intelligence is much more important than abstract intelligence. If two children have the same amount of intelligence and if they are given the same opportunities, both do not come out and rise to the same level in practical life. Thus, it is true that there is an influence of other traits. 'How to get it done', is more valuable and useful than 'what to do'. Motivational factors and particularly the personality make-up are equally important considerations in behaviour or life dealings. The personality includes person's physical, mental, emotional and temperamental make-up. Personality constitutes experiences, perceptions, beliefs, attitudes memory imagination, instincts, habits, thoughts and sentiments. Tastes, style of life, beliefs, enthusiasms colour personality. Clothes for wear and food for digestion

are also the part of the personality if these make any difference to the whole outlook on life and influence his total attitude towards society. If anybody wants to study an individual he should not study individual phases of activity at any time, but the fundamental integration of his entire integration of entire experience and attitudes i.e., personality. In constituting personality there is a contribution of a number of constituent elements, such as personal appearance and physical constitution, knowledge and experience, intelligence and character, habits and temperament, attitudes and beliefs, and so on.

Intelligence is the energy, seeking channels of activity, but it is not free. It is motivated by personality traits. Above an I.Q. level of 140, adult success is largely determined by such factors as social adjustment, emotional stability and drive to accomplish, that is by personal qualities, all of which go to make personality.

All agree that fundamental patterns of personality are formed during childhood. Whether a boy grows into strong independent and self reliant individual or into timid, lacking in initiative and self-confidence depends upon the parents behaviour. Generally, children behave as their parents do. They take parents' behaviour as their model and are infected by the attitudes of their parents

towards the problems of life. Size of the family, order of birth, rivalry among siblings and attitudes of parents therein - all these are important factors ^{for} moulding personality. Recent studies have revealed that the position of the child in the family and the home influences have much to do with the pattern of his personality.

The school should know the home influences for the growth and development of the child. In forming the personality of the child the school is also equally important. The environment of the school, the attitudes of teachers towards pupils, etc. affect the development of the personality of child. Some teachers ridicule, bully, tease and discourage their students. Their attitude is negative, prohibitive and cynical. All these make the child to develop a wrong view of life and work. The school develops the child educationally and mentally and provides knowledge and opportunities for broader outlook to develop personality. The school teaches habits of community living. It helps in socialization, emotional development and cultivates tastes and attitudes. Many schools offer materials for building up ideals and aims. The schools should realize their great responsibility towards their students. By giving better programmes, schools help in development of balanced personalities. The school can also prevent them from faulty

adjustments. It is rather regrettable that in present condition the schools give importance to marks, examinations, competitions, grades, knowledge of facts. The pupils are judged in terms of examination results and mastery of school subjects. All these aspects of experiences affect the growth of personality.

1.15 SOME DEFINITIONS ON PERSONALITY

To define personality is not easy, so before using the word 'personality' one has to be careful. In some respects when a person stands out above the rank and file, we describe him as a person having personality. We can also say that he has some character of an eminent degree or a combination of traits sufficiently striking to be noteworthy. Though it is difficult to define the term 'personality', we generally identify it with social ease and emotional balance. Personality can be described as style of form of behaviour. It is the organization of man's behaviour, habits and attitudes. Personality is revealed in the distinctive and characteristic ways in which a person reacts to everyday situations. Personality has to do with persons and not with things. A person's personality means what he really is. Below are given some definitions of the term personality described by the prominent psychologists.

Thus, according to Allport⁽¹⁾, personality is the dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment.

Some of the aspects of this definition merit special attention. The phrase 'dynamic organization' emphasizes that personality is constantly developing and changing, but at the same time there is an organization of system that binds together and relates the various components of personality. The term 'psychophysical' makes it explicitly clear that personality is neither exclusively mental nor exclusively neural. The organization entails the operation of both body and mind, inextricably fused into a personal unity. The word 'determine' implies that personality is made up of determining tendencies that play an active role in the individual's behaviour.

Eysenck's⁽³⁰⁾ view of personality seems to be congruent with Allport's definition. Eysenck defines personality as the sum total of the actual or potential behaviour patterns of the organism, as determined by heredity and environment; it originates and develops through the functional interaction of the four main sectors into which these behaviour patterns are organised; the cognitive sector

(intelligence), the conotative sector (character), the effective sector (temperament) and the somatic sector (constitution). In this definition a new dimension viz. 'somatic sector' is added.

Cattell⁽¹⁰⁾ provides a general definition: Personality is that which permits a prediction of what a person will do in a given situation. The goal of psychological research in personality is thus to establish laws about what different people will do in all kinds of social and general environmental situations. Personality is, in first place, concerned with all the behaviour of the individual, both overt and under the skin.

One of the important sociological definitions of personality is given by E.W. Burgess. Burgess⁽⁸⁾ as quoted by Gordon Allport, says : ' Personality is the integration of all the traits which determine the role and status of the person in society. Personality, might therefore, be defined as social effectiveness.

Campbell⁽⁹⁾ defines it thus : Personality is the expression of the total forces of the individual; it is the product of their integrated activity; it is the man in action as seen by the outsider and known to himself. In terms of McDougall⁽⁷²⁾, personality is the integration of

dispositions, tempers, temperaments, character and intellect.

Woodworth's⁽¹²⁸⁾ definition runs thus : Personality is the total quality of an individual's behaviour.

All these definitions make it clear that the term 'personality' concerns itself to total functioning of a person.

From the various definitions, a few common facts can be summarised thus :

Personality is the expression of behaviour. Personality is experienced through behaviour. It disappears when it is not expressed. Personality is a relatively permanent structural characteristic of the individual, the person, not animal. Animals may have individualities, but not personalities. Every person has personality, it may be weak or strong, social or anti-social, balanced or unbalanced. Two persons cannot have exactly the same personality i.e., every personality is unique.

Further, personality does not mean only the superior qualities of a person; it may also include inferior qualities. Personality sometimes is confused with character. But character is a moral term, prescribing some

desirable traits. Psychology is not concerned with prescription, but with description of what it is, i.e. with personality. Personality refers to the integration of all those psychological processes and forces that go to make personality, as defined earlier.

1.16 ASSESSMENT OF PERSONALITY

There have been a number of approaches to study and assess personality. In terms of theories put forth to explain personality major approaches or theories postulated can be subsumed under different names, viz., psychoanalytic theory enunciated by Freud⁽³²⁾, analytic theory revised by Jung⁽⁶²⁾, socio-psychological theory refashioned by followers of Freud like Alfred, Adler, Karen Horney, Erich Fromm, Henry Sullivan and others, Organismic or holistic theory propounded by Kurt Goldstein, Andai Angyal and others, Henry Murray's Personology, Kurt Lewin's Field Theory, Carl Roger's Self-Theory, Gardener Murphy's Biosocial Theory and a number of others earlier and in recent times.

Of all the attempts to measure personality, two approaches have been much striking, viz., (1) Type approach and (2) Trait approach. Type approach has been viewed in two contexts; constitutional or body type and Personality

Type. In this connection the contributions of Roston, Viola, Kretschmer and Sheldon have been noteworthy. They have attempted to classify the physique (body) into different types, such as asthenic, athletic and pyknic, etc. and related these body types to some temperament or personality types, such as viscerotonia, somatotonia, serebrotonia, etc.

The other approach to personality, namely trait approach, has been developed by factor analysts and others, such as Allport, Cattell and Guilford. This approach provides a very useful means of characterising an individual in terms of his traits of his behaviour responses.

Trait, according to Allport, is a determining tendency or a predisposition to respond. Allport defines the trait as 'a generalized, a focalized neuropsychic system (peculiar to individual), with the capacity to render many stimuli functionally equivalent and to initiate and guide consistent (equivalent) forms of adaptive and expressive behaviour.' Allport firmly believes that traits have existence in the subject and he makes distinction between individual and common traits. He is of the opinion that no two individuals ever have exactly the same trait. Though there may be similarities in the trait structure of different individuals,

there are always unique features to the way in which a particular trait operates for any one person. This distinguishes it from all similar traits in other persons. In this sense all traits are individual traits, unique and applicable to the single individual. However, Allport allows the term 'trait' to be used for both the individual and the common dimension with three considerations viz., (1) widely established generic usage, (2) concepts of individual trait and common trait being complementary in the study of personality - studying what is unique and what is universal, and (3) certain aspects of personality in respect to which all people in a given culture may reasonably be compared. Common traits are those aspects of personality in respect to which most mature people within a given culture can be compared. Individual traits are unique to the individual concerned and can be found in no other person in just that form.

For Cattell, trait is a 'mental structure' an inference made from observed behaviour to account for regularity or consistency in behaviour. Cattell⁽¹¹⁾ brings out the concepts of 'surface traits' and 'Source traits'. Surface traits represent cluster of manifest or overt variable that go together; source traits represent underlying variables that enter into the determination of multiple surface manifestations.

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Surface traits are produced by the interaction of source traits and they are less stable. Surface traits are divided into two; environmental-mould traits and constitutional traits. Environmental-mould traits are the result of the operation of environmental conditions ; constitutional traits reflect heredity or constitutional factors.

Cattell divides traits in terms of the modality through which the traits are expressed. The traits which are concerned with setting the individual into action towards some goal are 'dynamic traits' ; those concerned with the effectiveness with which the individual reaches the goal are 'ability traits'.

Cattell has developed a Personality Test, including 16 basic or primary traits viz., cyclothymia vs. schizothymia, general intelligence vs. mental defect, emotional stability or ego strength vs. dissatisfied emotionality, dominance or ascendance vs. submission, surgency vs. desurgency, character or superego strength vs. lack of rigid internal standards, parmia vs. threctia, premsia vs. harria, protension (paranoid tendency) vs. relaxed security, autia vs praxernia, shrewdness vs. naivete, guilt proneness vs. confident adequacy, radicalism vs. conservatism of temperament, self-sufficiency vs. group dependency, high self sentiment formation vs. poor self sentiment formation, high ergic

tension vs. low ergic tension.

The author of the present investigation follows Cattell and uses his test assessing personality traits of the gifted children under study.

1.17 TOOLS OF MEASUREMENT OF PERSONALITY

There are different techniques for measuring different aspects of personality of an individual. Some of them are as under :

1. Methods of Impression
2. Rating Scales
3. Self Rating
4. Personality Inventories or Verbal Tests (Questionnaires)
5. Situational or Performance Tests
6. The Projective Techniques
7. Association Tests
8. Tests of Perseveration
9. Physiological Methods

1. Methods of Impression :

This includes physiognomy, phrenology and graphology. In physiognomy strong chin, the beetling brow, the aquiline nose, the high forehead are given importance in discovering characteristics of personality. In phrenology the contours of skull are important. The peculiarities of handwriting e.g., upward and sloping lines, heavy and fine lines, crossing of t's, method of forming m's, n's, o's, etc. are used in graphology.

2. Rating Scales :

Rating is the subjective estimate of the strength of some quality or traits possessed by an individual and assignment of a rank or score or mark for it on a scale of values by judges who are well acquainted with the person to be rated. These scales are devices for ranking people with respect to their possession of personality and intellectual traits, skills, occupational efficiency, likes and dislikes, attitudes and interests.

3. Self-Rating :

In this method, a person is asked to give the self-estimate in a trait. This rating may be compared to the ratings given by other judges.

4. Personality Inventories or Verbal Tests (Questionnaires):

A standardized personality inventory or verbal test in the form of a questionnaire presents a set of questions or statements to be answered or marked by the subject. By means of questionnaire the data are gathered on (1) personal difficulties or troubles such as fears, worries, feeling of inadequacy, etc. (2) attitudes and beliefs; (3) interest in intellectual, mechanical or social activities.

5. Situational or Performance Tests :

In this type of personality test we wish to discover what a person will do in life situations. Miniature life like situations are created in such tests and it is seen how the subject behaves in such situations.

6. The Projective Tests :

The Rorschach Test and Thematic Apperception Test are the examples of the projective tests. In these tests the subject tries to project his experiences. Thus, this test is useful in obtaining evidence regarding subject's inner needs and in throwing light upon his difficulties.

7. Association Tests :

Here the subject is asked to recall words in association of some words given. These tests throw light on the emotional life of the subject. Repressed complexes are brought to light.

8. Tests of Perseveration :

Characteristics of high and low perseverators can be detected by these tests.

9. Physiological Methods :

It is well known that a change in the emotional set up is accompanied by certain physiological changes such as

changes in blood pressure, pulse rate, skin-resistance CR, EEG, etc. and thus, leads itself for measurement of such changes by laboratory instruments.

The present author has utilized in this study the personality inventory developed by Cattell.

1.18. THE PRESENT PROBLEM AND ITS OBJECTIVES

The author in the preceding pages has attempted to clarify the important concepts used in this study, viz. giftedness, creativity and personality. For the present investigation, the intellectually gifted children have been functionally equated with those who exhibit a high level of intelligence, with I.Q. 120 and above as measured by a standard intelligence test (in the present case by Group Test of Intelligence Standardized in Gujarati by Dr.K.G.Desai). Further, for these intellectually gifted children, the explicitly gifted children whose achievement was high (above 60% marks) in school subjects, were also separated for additional study.

For operational definition of creativity and personality, the terms have been designated as those which Torrance's Test of Creativity and Cattell's 16-Factor Personality Test respectively measure.

The present investigation thus aims at studying creativity and personality traits of intellectually gifted high school students in general (with I.Q. above 120) and also specifically the explicitly gifted children (with I.Q. above 120 and achievement above 60 per cent marks).

To be more specific, the investigator has kept in mind the following objectives for his research work.

1. To locate the samples of the intellectually gifted children from the secondary schools.
2. To study the sex differences in creativity and personality traits of the gifted children.
3. To study age differences in creativity and personality traits of the gifted group.
4. To study the creative abilities of these gifted students and relate intelligence and creativity as well as achievement and creativity.
5. To study some personality traits of these gifted children, and relate the personality traits with creativity.
6. To offer some suggestions based on these findings.

Before describing actually the methodology and results of the present study, it is fair, first to review some of the relevant studies undertaken by others in this connection. The next chapter is devoted to such review.
