CHAPTER II
THE CONCEPTS
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1. INTRODUCTION

2. DEFINITION OF CONCEPTS

a) THE CONCEPT OF TECHNOCRATS.
   i) THE CONCEPT OF 'COMMERCIAL SECTION' TECHNOCRATS.
   ii) THE CONCEPT OF 'TECHNICAL SECTION' TECHNOCRATS.

b) THE CONCEPT OF AGE.

c) THE CONCEPT OF INTELLIGENCE.
   i) THE CONCEPT OF INTELLIGENCE AS DESCRIBED BY SCHOLARS.
   ii) THE CONCEPT OF INTELLIGENCE AS USED IN THIS STUDY.

d) THE CONCEPT OF PERSONALITY
   i) THE CONCEPT OF PERSONALITY AS DESCRIBED BY SCHOLARS.
   ii) THE CONCEPT OF PERSONALITY AS USED IN THIS STUDY.

e) THE CONCEPT OF CREATIVITY
   i) THE CONCEPT OF CREATIVITY AS DESCRIBED BY SCHOLARS.
   ii) THE CONCEPT OF CREATIVITY AS USED IN THIS STUDY.
The above terms are used in a specific sense and therefore the concerned terms and the specific concepts are elaborated and defined as under:

a) THE CONCEPT OF TECHNOCRATS:

Though the concept of technocrats is a public concept and does not need much elaboration, still it has to be defined for its specific sense used in the present research. 'Technocrats' cover a wide variety of technical executives in general, but the investigator has included only those technocrats who were employed in factories and mills in two sections, i.e. Commercial Section and Technical Section. Their training and selection procedure were similar and they were not different either academically or in basic designation as engineers. The two groups of technocrats of this study differed sectionwise as far as their assignments were concerned, details of which are as under:

i) THE CONCEPT OF COMMERCIAL SECTION TECHNOCRATS:

These were the technocrats who were dealing with:

- Transportation.
- Communication.
- Business monitoring.
- Transactions.
- Liaison duties.
- Arranging and managing materials and instructions.
1. **INTRODUCTION:**

One of the preliminary requirements of any research work is to elaborate and define the concepts used in the work. It is to be done to facilitate communication among scientists and the consumers of the results. Since identifying the exact nature and dimensions of a concept is of major importance in a research work, it is very essential that an investigator recognizes and defines the concepts. Defining a concept means, "to pinpoint the concept or defining a concept to reach the core of the concept, i.e. thread-bare analysis."¹

The definition of the concept sets the direction of the study, reveals the methodology, helps the researcher to control subjectivity or the biases and makes the research work practicable. Since the problem of this research work was based upon 'Creativity in technocrats, a few relevant concepts associated with the creativity on the basis of the pilot work and therefore included in the actual research work were as follows:

2. **DEFINITION OF CONCEPTS:**

   a) **THE CONCEPT OF TECHNOCRATS - 'COMMERCIAL GROUP', 'TECHNICAL GROUP'**

   b) **THE CONCEPT OF AGE (CHRONOLOGICAL/MENTAL).**

   c) **THE CONCEPT OF INTELLIGENCE.**

   d) **THE CONCEPT OF PERSONALITY.**

   e) **THE CONCEPT OF CREATIVITY.**

ii) THE CONCEPT OF 'TECHNICAL SECTION' TECHNOCRATS:—

These were the technocrats who were dealing with:—

- Production activities.
- Consultancy or similar services
- Designing
- Planning production
- Co-ordination
- Quality Control
- Directly related with technology
- Research and development
- Industrial Engineering
- Executive trainers
- Maintenance

b) THE CONCEPT OF AGE:—

This concept though apparently a common one, is considered important by the investigator for proper definition. Actually in 'Psychology' the concept of age is often considered with references to chronological age and mental age. Both of these ages have reciprocal influences on the development of personality. The aging process, when considered chronologically, affects each and every behaviour and reaction of an individual.

In this investigation, 'age' is considered only chronologically for selective manipulation purpose. The concept of 'age' is taken as a biological state of an individual's body where tissues and cells die or become old as person adds more years to his life.
In normal conditions new cells take place of the old or dead ones but after a particular age this replacement becomes imbalanced, and as a result vigor of the body and the mind decreases. A general loss of mental capabilities like memory and concentration occurs. It has been established by a number of scholars that creativity also lessens after a particular chronological age. This is the reason why the present investigator cannot afford omitting an adequate definition of the concept of age in the present research. In a number of researches it is established that the peak age for creativity falls around 25 years in technical settings. Though age does not play a very very important role in creativity in general still deteriorating trends in creativity of an individual can be seen after a particular age. It is also certain that the peak age differs from individual to individual. The decline in creativity is more pronounced when environmental factors are unfavourable.

c) THE CONCEPT OF INTELLIGENCE :

(i) THE CONCEPT OF INTELLIGENCE AS DESCRIBED BY SCHOLARS:

During the first forty years of this century the idea of intelligence or general mental ability was found useful and important by psychologists. How 'intelligence' came to be an important scientific concept and how the word became common in popular usage has been described in detail in numerous scholarly articles by SIR CYRIL BURT (1955). The introduction of the concept was mainly due to the writings of HERBERT SPENCER and of
FRANCIS GALTON in the nineteenth century and the word came into general use considerably later.

Intelligence has been defined by many in terms of mental powers but it does not give a clear picture of intelligence as the powers are vaguely defined and nonobservable. Modern psychology is concerned more with the analysis of behaviour than with some hypothetical casual entity in the brain.

SPEARMAN (1923) produced extensive statistical evidence for the predominance of general ability or intelligence. At about the same time BENET (1916) in France produced the first satisfactory scale indicating operational concept of intelligence. In the succeeding thirty or forty years new developments in the concept were incorporated and the importance of general mental ability was questioned. In the twentieth century HEBB, D.O. (1949) and PIAGET J. (1950) did a lot scholarly work in shaping the concept of intelligence.

The concept of intelligence owes much to the early studies of animal learning. The questions about the nature of intelligence and intellectual development have long been a subject of considerable controversy among psychologists and educationists.

After the First World War a lot of field work was done on the subject of 'intelligence'. SPEARMAN could locate two kinds of intelligence through Two FACTOR THEORY basing their research upon SPEARMAN's statistical analysis of intelligence,
KELLEY (1955) and THURSTON (1941) arrived at a conclusion that a MULTIPLE FACTOR THEORY represents a better explanation of the nature of intelligence. THURSTON (1941) listed thirteen components of intelligence, seven of which are considered to be the primary mental abilities. These are verbal comprehension, numerical ability, perceptual speed, space visualization, reasoning, word fluency and memory. THURNDIKE (1920) claimed that quality of intelligence depends very much on the quality of 'neural connections'. He further concluded that there probably is no general mental ability as such and suggested that intelligence can be considered to have three aspects - abstract, mechanical and social, and that an individual may give evidence of differences among these three aspects. GARRETT (1946) interprets intelligence as the configuration of abilities needed in the solution of problems, through understanding and using symbols. According to GUILFORD (1967) human intelligence can ultimately be broken down into 120 factors and all these factors can be classified in three ways, that is on content basis, on product basis and on operational basis. Thus different theories emphasise different aspects of intelligence. But the main point they agree upon, is that intelligence consists largely of some sort of a combination of abilities and differences in abilities cause differences in intelligence from person to person and from group to group. Guilford divided intellectual abilities into four large classes :-
1) MEMORY AND THINKING :-

Under this four abilities are grouped:

i) Cognition,

ii) Evaluation,

iii) Convergent production,

iv) Divergent production.

2) COGNITION :-

The cognitive ability is related with the discovery of new information or the recognition (rediscovery) of old information.

3) PRODUCTION :-

This ability is concerned with new outcomes resulting from the use of stored information.

4) EVALUATION :-

The evaluative ability is linked with decision as to the goodness, accuracy, suitability or other forms of desirability/undesirability of information or of products.

Some recent work has attempted to identify two major types of intelligence. For example DAVID. C. McCLELAND (1975) emphasises that one type of intelligence is 'Fluid Intelligence' which refers to a general, untrained kind of intelligence. It is probably inherited and seems to resemble the 'G' factor
(Ref. SPEARMAN) very closely. The other type of intelligence according to McCALLAND is called Crystallized-Intelligence and it is dependent on the environment and on specific learning experiences.

Intelligence is an index of ability in task requiring cognition. Intelligence is regarded as the quality which distinguishes man’s adaptability, his capacity to learn and to reason. Modern psychology is concerned more with the analysis of intelligent behaviour and mental processing than with some hypothetical causal entity in the brain.

Earlier intelligence was regarded as an innate capacity dependent on the genes inherited from the parents, but the works done by PIAGET (1925-1958) on the development of intelligence and by D.O. HEBB on neurological basis of intelligence have produced sufficient evidences that inborn brain power does not develop into effective intelligence without stimulation from the environment, also that an unstimulating or deprived environment can inhibit its' growth. As described in the Encyclopedic Dictionary of Psychology (Ed. HARRE and LAMB 1983) "Like all other genetic attributes it is the product of interaction between the organism and its environment."

Intelligence and creativity are related to a fair degree but creativity is more than just intelligence. "Intelligence does not guarantee creativity, nor does creativity guarantee that the person in question is intelligent. It takes a combination of intellectual abilities and other factors for
truly creative behaviour to emerge."¹ (BOURNE, J. R. and EKSTRAND 1976).

(ii) THE CONCEPT OF INTELLIGENCE AS USED IN THIS STUDY:

In the present research the concept of intelligence is operationally represented by the measure of the construct obtained through the "Alexander's Pass Along Test." It measures "... two factors of intelligence in combination namely, "g" and 'F', 'g' being Spearman's factor of general mental ability and 'F' being a factor established by the author and referred to as practical factor being of importance in situations of concrete nature, for example in work with wood and metal, in mechanical drawing in fact, in practical situation". (Ref. : Manual for Pass Along Test).

Thus intelligence as conceived in the present research consists of the combination of the 'g' and 'F' factors which is referred to as practical ability, a functional ability which generally determines success in the practical situations of life. W.P. ALEXANDER (1935) defines intelligence as "... the capacity to think in concrete situations,"² the capacity which is free of 'V' (Verbal) factor but includes other two factors i.e. 'g' and 'F' factors.


2. W.P. ALEXANDER - MANUAL OF PASS ALONG TEST.
(i) THE CONCEPT OF PERSONALITY AS DESCRIBED BY SCHOLARS:

Over the years, people have defined 'personality' in various ways, including one's outward appearance, one's role in life, the totality of one's qualities or attributes, the way one really is, one's general behaviour pattern and many others. To-day dozens of formal definitions exist, none of which is universally accepted.

The concept of personality is very broad and the study of personality can involve all facts of human behaviour and can encompass aspects of developmental, social, experimental, physiological, clinical, aviation and forensic psychology. Thus any psychologist who investigates human behaviour can be said to be exploring some segment of personality.

'Personality' can be approached, defined, assessed and researched from anyone of a wide variety of theoretical points of view, each of which have strengths and weaknesses. Literally dozens of such theories exist to describe the concept of personality. 'Dispositional theories' start with the basic assumption that personality is composed of dispositions within the individual to behave in certain ways. They assume that these dispositions are relatively stable in time and generalized over a wide variety of circumstances. The names given to these hypothesized behavioural dispositions are different in different theories.
Some dispositional theories assume that there are a few specifiable personality types and that each type is disposed to behave differently. The works done by HIPPOCRATES, ERNST KRETSCHMER, WILLIAM SHELTON and JUNG are the examples of typology in personality theories. But 'Type Theories' are not generally valid because they present oversimplified concept of personality and inadequate descriptions of behaviour.

'Trait Theories' account for the diversity of human behaviour and the behavioural consistencies shown by each individual. They start with the basic assumption that a given person's behaviour is controlled not by the type of person he is, but mainly by the wide variety of stable personality traits that each individual has to some degree or another. CATTELL's (1964) theory of surface and source traits and ALLPORTS theory of common and individual traits are the best examples of this category of personality theory. EYSENCK'S (1952) theory of personality dimensions is not much different from the other two theories mentioned here. All such theories do not contain suggestions for new personality change techniques, which emphasize equal role of environment in shaping personality or behaviour pattern.

Another approach to personality views behaviour as driven by the individuals' needs or goals. This approach is exemplified by the work of HENRY MURRAY (1938). From MURRAY'S point of view, measurement of personality involves assessment of both manifest and latest needs.
Psychodynamic theories of personality are based on the assumption that personality and personality development are determined by intrapsychic events and conflicts. This approach consists of a very different concept of personality. Freudian concept of personality come under this category.

There exist social learning theories also. These theories focus on behaviour and the environmental conditions that affect it. From this point of view, personality is the sum total of the individuals' behaviour rather than some hypothetical structure which that behaviour reflects. Such examples are of the theories developed by JOHN DOLLARD and NEAL MILLER (1940), B.F. SKINNER (1938) and also by BANDURA (1965).

Finally there are phenomenological or cognitive theories which assert that the behaviour of each human being at any given moment is determined primarily by that particular person's perception of the world. According to these theories human beings are not passive 'carriers' of personality or mere recipients of reinforcement, but active thinking organisms that are responsible for and capable of making plans and choices about their behaviour. Perhaps the best-known example of phenomenological approaches to personality is the self theory of CARL ROGERS (1951).

(ii) THE CONCEPT OF PERSONALITY AS USED IN THIS STUDY:

Thus the theories of personality are exhaustive but on account of its complexity the theories differ in comprehensive-
ness of the definition. Some focus more on overt behaviours while others on inner aspects of personality. But as is known personality has to be defined operationally for scientific work, and CATTELL's (1969) definition fulfills this criterion, "Personality is concerned with and deduced from all the behaviour relations between the organism and its environment. It is that which predicts behaviour, given the situation." The Cattell Culture-Free Test is an attempt to measure 16 personality factors (16 P.F.). His efforts to arrive at a comprehensive description of personality, finally culminated into the measuring device of Sixteen Personality Factor Questionnaire for the age 16 and over, yielding 16 scores. This research has used this particular tool and therefore the basic assumption about the personality is on the lines of the CATTELL's definition.

The structure of personality is narrated in terms of sixteen primary factors and a few second stratum factors by CATTELL. The primary source traits provide detailed aspect of the personality, while second stratum source traits can be recognised only so far as the primary trait analyses are sensitive enough to define the correlations which exist among primaries. The second-stratum source traits have been used in this research and the elaboration of the concepts of these traits are as follows:

I) **INTROVERSION Vs. EXTRAVERSION:**

It is a broad temperament trait with appreciable hereditary contribution (CATTELL 1957b). The introvert persons tend to be shy, self-sufficient and inhibited in interpersonal contacts. The dominance of this trait in a person helps in many behaviours or activities where concentration is required. Extraversion is just the opposite trait. The persons who predominantly possess this trait are socially outgoing, and being uninhibited in their behaviours, are good at making and maintaining interpersonal contacts. This trait can be very favourable in situations where social mixing or contacts are essential but should not be considered necessarily favourable in all situations in general.

II) **ADJUSTMENT Vs. ANXIETY:**

The person whose adjustment is better is less anxious. However indicators of very high level of adjustment (i.e. extremely low scores) can mean lack of motivation for difficult tasks. On the other hand anxiety, can be useful in providing a thrust effect in many actions of a person but a high level of trait anxiety may cause mal-adjustment as well. Very high anxiety is generally disruptive of performance and may produce pathological conditions in a person.
III) TENDER-MINDED EMOTIONALITY Vs. ALERT POISE:

Tender-minded emotional persons show a tendency to feel rather than think. Such persons are likely to be troubled by pervasive emotionality and are often feel frustrated or discouraged. In problematic situations they cannot take quick decisions for action as they feel difficulties in solving conflicts on mental level. Still such a trait can help in situation where sensitivity to subtleties is required.

The alert-posed are those persons who show cheerfulness, alertness, and readiness to handle problems at a cognitive objective level. They are enterprising, decisive and resilient personalities. However they are likely to miss the subtle relationships of life and pay more attention toward the obvious. In difficulties they rush for quick action, very often without giving sufficient thought or consideration to the situation or action.

IV) SUBDUEDNESS Vs. INDEPENDENCE:

Subdued are the persons who are group dependent, chestened and passive in their behaviours. They are likely to seek support of others in all of their decisions or actions and avoid risk taking situations. On the other hand the opposite group show a general temperamental independence in the broadest sense. Such a person is independent, radical, autistic, projective and a law to himself. He is an aggressive and a daring person. He does not
hesitate in taking initiatives.

c) THE CONCEPT OF CREATIVITY:

(i) THE CONCEPT OF CREATIVITY AS DESCRIBED BY SCHOLARS:

One of the main concepts of the present study is 'Creativity'. 'Creativity' in itself is a complex term and has got many aspects, as mentioned by POWELL JONES (1972), "The complexity of creativity makes it almost impossible to have a universally accepted definition. Its factors are descriptive rather than explanatory. The process of creativity is so complicated that to define it precisely might do to it a dis-service."  

Although importance of creativity is recognised by all, almost every one is completely baffled by what it really means and how it comes about. The generally accepted definition of creativity is the capability to bring something new into existence. The controversy and lack of understanding revolve around what is meant by 'something new' and how it comes into some concrete form.

In fact, creativity is the end product as well as the process. PORTERFIELD (1963) says that creativity is "to do something new with exploratory sense by the means of a new method, which gives a different direction to cultivate something

1. POWELL JONES (1972), Creative Learning in Perspective.
prosperous and beneficial."¹ Thus the author's emphasis on 'method' gives a different perspective of creativity, but his statement is definitely controversial as creativity does not result always in something prosperous and beneficial. The negative results of destruction and human agony cannot be denied when we think of creations like nuclear explosives. Although basically it might be to cultivate something prosperous and beneficial still human nature of being destructive in many actions cannot be ignored when 'creativity' and its' operational or manifested forms are judged on reality basis.

While the emphasis is more on the process of creativity, scholars came forward with a number of levels and stages covered in the act of creativity. GHISELIN (1960) finds two levels of creativity. Creative action of the higher sort alters "the universe of meaning by introducing into it some new element of meaning or some new order of significance. It occurs more commonly when some one feels that the old universe of meaning is inadequate. Creative action of the lower sort gives further development to an established body of meaning through initiating some advance in its use."²

The investigations done by HENRI PONCARE (1955-'70) present a few stages of creativity process:

1. PORTERFIELD - (1963), Creative factors in Scientific Research.
2. GHISELIN - (1960), Creativity and the individual, Authors - Morris & Stein.
1) **Saturation**:–

It is a preparatory stage in the exploration concerned with a particular problem. It is the stage of becoming thoroughly familiar with a problem with its setting and more broadly with activities and ideas a kin and to the problem.

2) **Deliberation**:–

Mulling over these ideas, analyzing them, challenging them, rearranging them, thinking of them from several viewpoints.

3) **Incubation**:–

It is a stage of absorption perseverance. Relaxation or sleeping over the problem is often more helpful. It is the stage of turning off the conscious and purposeful search for getting the frustrations and unproductive labour, letting the subconscious mind work.

4) **Illumination**:–

This refers to the appearance of good ideas coming seemingly from nowhere. The person is conscious and alert at this stage to catch the most relevant point. At this stage the focus is on hitting upon a bright idea, sensing that it might be the answer.
Accommodation:—

Clairifying the idea, seeing whether it fits the requirement of the problem as it did on first thought, reframing and adapting it, putting it on paper, getting other people’s reaction to it.

Accounts by psychologists of the creative process both in Art and Science have not always agreed in their analysis of the successive stages, some employing a finer breakdown than others, but there has been fairly general acceptance, at least some of the qualities, of the scheme suggested by GRAHAM WALLS (1926). Variations on and modifications of WALLAS’ scheme are conveniently summarized by HAEFELE (1962) and by KNELLER (1965). The four stages suggested by WALLAS were:—

1) Preparation including an immersion in the subject matter, an application of all the relevant skills derived from past experience, a sufficiently flexible approach to achieve any required restructuring of habitual sets and attitudes and a high level of motivation and of confidence in one’s own ability to achieve the task.

2) Incubation as mentioned above, consists of one or more periods of apparent inactivity and unconscious digestion and processing of the material before the theory emerges or creative act takes shape.

3) Illumination is a stage of eventual insight.

4) Verification covers every kind of further activity for confirmation and reporting.
According to IRVING TAYLOR (1959) there are five levels of creativity in order of quality of the product:

1) **Expressive Creativity** :-

   It is the level where a person is capable of independent expression, although the product is neither very original nor very important for general utility.

2) **Productive Creativity** :-

   It is the stage where creative behaviour is more controlled and the technique may be different from those used so far. The end result or the product is not much different from the existing ones.

3) **Inventive Creativity** :-

   It results into a perception of new and unusual relationship between various components and thus brings creativity to a higher level.

4) **Innovative Creativity** :-

   Only a few creative people can react to the level where something new is constructed. Innovation is the basic criterion of this level.

5) **Emergentative Creativity** :-

   This is the level of genius creatives who do not produce something new only, but evolve new principles fundamentally involved in the process and product.
A few psychological variables have been correlated with creativity to present a clearer concept of this particular variable. 'Sensitivity' is the most preliminary one in the act of creation. M. S. SATHYNA (1982), while describing the image of an artist, says, "An artist is always a very sensitive person . . . It is this, his acute sensitivity, which in the first place, makes him an artist and then sustains him as one. Therefore, I would say that there is definitely a relationship between sensitivity and creativity." 1

AMRITA PRITAM (1982) associates creativity with other variables. She says, "Creativity is a dialogue between intellect and emotions and it is love which brings them together. Creativity is also a conversation between self and other self, the small self and the vast self and the elated self." 2 AMRITA PRITAM's explanation of creativity is based upon the higher level of self-growth and the same idea was proposed by TAYLOR and WILLIAM (1966) when they emphasised on sharing one's experiences with others as the source of creativity.

Creativity and imagination cannot be separated, still 'imagination' has not got it's due emphasis in creativity by scholars. There are few like GALILIO, who says, "Creativity means imagination, insight and emphasise the fact that what the individual discovers, must emerge as a new configuration out of

a general cultural background as a basis for the insight of the artists, scientists or inventors."

Recently a great deal of research is done on convergent and divergent thinking and emphasis is laid on divergent thinking in creativity. LOWENFIELD (1969) finds creativity a divergent production opposite to convergent production of intelligence. MUSIL, MIROSLAV and ODRUSCK DUSAN (1982) also concluded that divergent thinking is an important factor in scientific creativity. But is also known that creativity is not divergent thinking in toto. This was certainly the expressed opinion of SPEARMAN (1927) and the view is still tenable (BURT, 1962, VERNON, 1969) that much of what passes for 'Creativity' is ascribable to general intelligence, though controversies on the view cannot be totally ignored.

KOESTLER (1964) concluded on the basis of his empirical work that "Creativeness is simply a process of arranging well known facts into new relationship so that results may be achieved more effectively. The connection nearly always occurs in a flash of insight and is result of subconscious thought process." ¹

There were views which often linked creativity with insanity and intelligence. HAVLOCK (1904) could find in his study of creatives, a very little proportion who could be called psychotic. Minor emotional difficulties, a little

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¹ KOESTLER (1964), Creative Learning in perspective by POWELL JONES (1972).
neurotic behaviour and health problems were comparatively more in proportion. Terman (1926) expected in 300 creative Ss of his study to have possessed outstanding intelligence, but he found only a few with very high IQs of 170 to 200. The average was 135 and some were as low as 100-110. The geniuses were distinguished more by the character traits of perseverance and drive and the encouraging environment in which most of them were reared. Creativity is very closely linked with problem solving behaviour. Getzel and Csikszentmihalyi (1967) defined creative thinking as "the posing of a problem as well as the action of trying to solve it." In fact problem solving behaviour gives an operational form to the concept of creativity.

Creativity has been perceived as an integration of a few factors. Tudor Powell Jones (1972) stated that, "creativity is a combination of flexibility (of thinking), originality and sensitivity to ideas (fluency of ideas) which enables the thinker to break away from usual sequences of thoughts into different and productive sequences." According to Powell's views the following four dimensions of creativity have attracted attention of many experts:–

1) Relationship of elements.
2) Conflict involved in mental or physical process.
3) Problem solving as creative behaviour.
4) The environment as the influencing factor.

2. T. Powell Jones (1972), Creative Learning in perspective.
Different psychological aspects of creativity cannot be ignored from its global concept. DONALD W. MACKINON (1946) included an elaborate account of four psychological aspects in the concept of creativity. These are:

1) Nature of creativity product.
2) The creative process.
3) Traits or characteristics of a creative person.
4) The creative situation.

He also mentioned five criteria for a real creative work:

1) Only novelty or originality of ideas should not be taken as the sole and sufficient characteristic for a creative act.
2) Raising a problem is as much a part of creativity as is the solution of that problem.
3) A shallow and simple solution of the problem is not creativity in a real sense. A deeper solution even complex in nature, is the creative expression.
4) Creative behaviour should create new conditions for human existence.
5) The final solution should be critically evaluated and then elaborated for scientific communication.

'Creativity' has been perceived with special reference to heredity and environment. GALTUN (1869) demonstrated that 'eminence' tends to run in families, interpreting this to prove the heredity of genius. There are others who urge that creativity apt to be stifled by the pressures of parents and peer groups and also by general environment in which a person lives or works.

All the above mentioned statements and definitions make it clear that the primary meaning of the term 'Creativity' is man's capacity to produce new ideas, insights, inventions and innovations which are accepted as being of social, spiritual, aesthetic, scientific or technological value. It is manifested on account of a joint effort of the potential and the environment. The description of creativity as mentioned in The Encyclopedic Dictionary of Psychology (Ed-Harre & Lamb-1983), is "This emphasizes novelty and originality in the production of new combinations of familiar patterns, as in poetry and music, or re-organisation of concepts and theories in the sciences. But unconventionality is not sufficient: a lunatic's ravings are not creative. The product must be re-organised by capable people, even if initially rejected and not appreciated until later."

Biological or physiological infrastructure of creativity is not very clear till to-day. There are evidences that minor hemisphere provides the basic source of creativity, McCONNELL's (1974) description can be quoted in this context.
"Zaidel believes that the two hemispheres are pretty equal in their abilities up until the time a child is 5. After that, language ability increases much more rapidly in the left hemisphere, while the right (minor) hemisphere seems to take on creative and non-logical abilities that are neglected by the left."\(^1\)

Thus the concept of creativity seems to have many co-ordinates. Some authors have defined creativity in comparatively simpler terms. GETZEL and CSIKZENTMIHALGI (1967) have stated in a straightforward manner that creativity is "the posing of a problem as well as the action of trying to solve it." But it is known that the act of creativity is neither so simple nor can be defined through the description of a single process.

\[(\text{ii}) \quad \text{THE CONCEPT OF CREATIVITY AS USED IN THIS STUDY:}\]

The investigator used the concept of creativity in the present research as measured by E. PAUL TORRENCE’s test ‘WKOPAY’ (What kind of Person Are You) fundamentally. It is well kept in mind that creativity is a capricious process which rarely shows itself when called upon, hence it is beyond any test to estimate anything but rather a partial form of originality and effort of imagination to produce. It is also kept under consideration that for creativity one has to strive hard very often for the goal to attain and prior to this act one has to enrich

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one's knowledge, has to look everything available in the field of interest and saturate himself in the subject matter, he is to work up.

According to TORRENCE Creativity is loaded with factors - 'Acceptance of Authority,' 'Self-Confidence,' 'Inquisitiveness,' 'Awareness of others' and 'Disciplined Imagination'. Some of these factors are positive while others are negative in values. The concept of creativity also includes abilities of fluency, flexibility, originality and elaboration of ideas, which are measured through performances in this investigation. For this particular research, the investigator decided to get five categories of technocrats possessing five levels of creativity, keeping in view the importance of inter and intra-group comparisons. It is presumed that technocrats possess creativity up to a fair degree, 'high Creativity' has been subdivided into three levels - i.e. Genius creative, very superior creative and superior creative, and two other levels are of 'average' and 'low' creatives.