Summary
SUMMARY

The almighty God, the Creator of the universe, is the supreme mind who possess the finest abilities of creativity. He has created all of us and all that is revealed in nature. Because man is created by God in his own image there exist some creative attributes in him which enable him to possess the capacity and capability to think and act creatively. It is not easy to come to the term with somewhat nebulous intangible but strongly fascinating concept of creativity. The psychology of man is impossible to capitulate without understanding man’s ability to create. In fact, the man without a creative tendency is merely “a beast who walked talks.”

Creativity is the only phenomenon which separates man from machines and animals. It is a vision and actualization of that vision. Which is a unit; it is complete and pragmatic. Just as night gives birth to day, the seed to plant, an ovum to a child; so too a creative vision, gives birth definitely to a creation and its actualization produces scientific, artistic or religious formations. The awareness of such creative vision produces happiness and joy within the person.

In India many innovations took place at various phases of our development. In the 1960s, Dr. Vikram Sarabhai said that India should design and develop a large satellite launch vehicle and put a communication satellite and remote sensing satellite in geo-synchronous orbit and polar orbit respectively. In India this was thought impossible. But this visionary statement ignited hundreds of scientists and technologists and thousands of technicians. Today India is capable of building any type of satellite launch vehicle and remote sensing satellite in polar orbit as envisioned by Dr. Vikram Sarabhai.

Meaning of Creativity

Creativity is the ability to produce work that is both novel (i.e. original, unexpected) and appropriate. “To create” means “to make or bring into existence some- thing new”. Creativity is a topic of wide scope that is important at both the individual and society levels. When one think of creative activity perhaps the work of highly talented or creative geniuses comes to mind; the creations of great sculptors, dance composers, painters, writers, scientists, mathematicians, inventors, at one extreme are gifted people such as those, whose work may change the course of
civilization or character of an art; at the other extreme is the vast majority of people who follow the customs of their culture faithfully, rarely acting in an original manner. From this point of view, some people are highly creative but most of them being followers are highly uncreative.

They must have certain skills and a background in the relevant field on which to base their ideas. Creative individuals sometimes experience a sudden brilliant illumination, but more often their new ideas come about through a slow intuitive understanding field of endeavour. Their background allows them to be constructively creative. At the second stage, a creative person applies the criterion of appropriateness e.g. an artist takes brush in hand and transposes visualizations on the canvas. The person can move towards the third stage, the communication of results. Communicating the ideas is sometimes relatively straightforward e.g. un-covering of canvas by an artist.

Sternberg and Lubert (1995) proposed that novelty must be coupled with appropriateness for something to be considered creative. Novelty can be the coalescence of any two or more different things or thoughts. For instance, Damien Hirst is a controversial artist who has sliced animals into fragments, but many people do not consider this as creative even though it is novel and original. Many people do not recognize the factor of appropriateness in his work and consider it to be feeble.

**Nature of Creativity**

Creativity is too complex in nature. It is something that comes across everyday. One hears of creative people, admires creative objects of art or reads creative books. Yet despite our ability to recognize creativity manifesting itself, there is considerable confusion about what creativity really is.

**Unconscious**

The unconscious follows a type of thinking that is different from the logical and analytical thinking of the conscious mind. Freud has studied the mechanisms that the unconscious uses is thinking and calls them primary thought processes. These mechanisms can be seen in dreams. Some persons have access to the resources of the unconscious. These are mentally healthy persons and they can draw upon the unconscious in their creative work. But like intuition we know very little as to how to use the unconscious in creative work.
Personality Traits

There are some personality traits that bear a close relationship to creativity. Among these are motivation, imagination, independence, tolerance of ambiguity, preferences for complexity introversion, curiosity, wide range of interests, humour, artistic and aesthetic interests.

Creativity Syndrome

Creativity is a complex blend of a number of abilities and traits. All studies to determine what makes a person creative point to some principal characteristics, which can be acquired or developed to some degree in any individual. At the same time, the naturally creative person can learn to raise his already high creative output even higher.

Problem Sensitivity

This is basically the ability to recognize that a problem exists; or to be able to cut through misunderstanding, misconceptions and lack of facts or others obscuring handicaps and recognize the real problem. Human life is faced with numerous problems may be concerning his personal life, his social life, professional life or any other aspect of life. But we are not aware of them. A creative person senses the presence of these problems and tries his best to find out a satisfactory and acceptable solution to the problem.

Idea Fluency

This term simply means that a person can pile up a large number of alternative solutions to a given problem in a given time. Idea fluency depends largely upon personal mental habits. It is an attribute that can be developed or improved by nearly every person who will consciously apply it to himself.

Originality

Originality refers to finding new ways to various existing conditions or new ways to adopt existing ideas to new conditions or a new modification of something that will fit in an existing condition. An idea which is rarely presented can be accepted as an original idea. Thus statistical infrequency is the criterion to determine originality of a response.
Flexibility

The quality of creative flexibility is largely that of being willing to consider a wide variety of approaches to a problem. This, in turn, is largely a matter of attitude. Rather than obstinately freezing on one particular idea or a single approach to a problem, the flexible person starts out by remembering that if one solution won’t work, he can always approach the problem from another angle. This is also called “creative expectancy the more is number of ideas or solutions falling in, more is the flexibility factor in an individual’s thinking.

Elaboration

Elaboration is the process of filling out or detailing ideas. Generally, the more elaborate a person is in developing ideas, the higher the person’s level of creativity.

Imagination

Imagination is a form of playful analogical thinking that draws on previous experiences, but combines them in unusual ways, generating new patterns of meaning. Considerable evidence demonstrate that a playful approach to the task at hand increases the likelihood of producing creative results. Obviously logical thinking with its rigorous rules does not leave room for free play, while imaginative thinking does allow for playful associations to occur within contextual constraints, leading to the generation of contextually valid patterns of meaning.

Imagination plays an important role in creative thinking. In fact, one form of imagination, the creative imagination is synonymous with creativity. The relevance of imagination has been noted by many.

MEANING OF PERSONALITY

Personality may be taken to be an individual’s most striking or dominant characteristic. In that sense a person may be said to be a “shy personality” or a “neurotic personality”, meaning that his or her dominant attribute appears to be shyness or neurosis. In popular usage, personality is often equated with social adroitness and effectiveness. In this usage, personality is the ability to elicit positive reactions from other people in one’s typical dealings with them.

“Personality is the dynamic organization within the individual of psychophysical systems by which his unique adjustment with environment is determined.” ----Allport.
PERSONALITY AS ADJUSTMENT

An individual, since his birth, attempts to adjust to his environment. Adaptability to environment is an individual’s characteristic pattern of behavior.

TYPE OF PERSONALITY

Gall and Spurzhein started the study of 'Physiognomy' in Europe. They began to interpret personality in terms of physical features, face, skull, size and shape of jaw etc. Lombroso, the famous Italian criminologist, claimed that criminals have receding forehead and prominent cheek-bones and jaw. But all these theories failed in due course. On the basis of Physique, Warner divides children into such groups: (i) Normal, (ii) Physically undeveloped, (iii) Crippled, (iv) With Low Nutrition, (v) Backward, (vi) Nervous, (vii) Mentally exceptional, (viii) Epileptic, and (ix) With Abnormal Nerve Signs.

--- Warner

On the basis of thinking - persons are of three types:-

(i) Abstract thinkers, (ii) Idea thinkers, (iii) Thing Thinkers. On the basis of imagination, they may be categorized into such types: (i) Visiles, (ii) Audiles, (iii) Motiles, (iv) Tractiles, (v) Olfactiles, and (i) Mixed. This classification is obviously on the basis of the dominance of sense-organs.

--- Thorndike.

Kretschmer. German Psychiatrist Ernest Kretschmer distinguished three body types on biological basis:

(i) Pyknic - Short and stout.
(ii) Aesthenic - Tall and thin
(iii) Athletic - Muscular and well-proportional.

Jung’s two types introverts and extroverts.

An introvert is self-centered, shy, simple and impractical. He does not bother to please others. Philosophers, painters, and scientists belong to this group. Extroverts are practical minded persons. They are opportunists and try to please others. Administrators, militarists and politicians belong to this group. Most of them are in between and can be termed as ‘ambiverts’.
According to Stephenson, there are two types of personality patterns on the basis of Jung's classification: (i) Perseverators, (ii) Non-persevarators. Perseverators are introverts. When an activity is ended, it may perseverate in their mind for a long time, such as the melody of a song. Non-persevarators are extroverts.

THE NATURE OF PERSONALITY

A simple working definition of personality is the complex of stable behavioral characteristics, patterns, or traits that distinguishes one person from another.

At any rate, these personality patterns are fairly stable and difficult to change. A personality, then, is a mosaic of behavioral traits with which we characteristically express ourselves and interact with others as we try to cope with life's incidents and emergencies.

PERSONALITY THEORIES

Along with the ways of observing and measuring Personality, theories of personality and its development have evolved. Such theories classify personalities into a series of types, or classify the basic traits that make up personality, so they are called type and trait theories, respectively. Other theories are called dynamic theories of personality, and are addressed to such questions as how people react to inner or outer conflicts, how they handle stress, and what processes, like defense mechanisms, they use in dealing with their conflicts. The earliest ideas about personality were expressed as type theories; and dynamic theories.

Types refer to categories that are distinct and discontinuous. The following sections provide an overview of some of the more popular and commonly known Personality type taxonomies.

TRAIT THEORY OF PERSONALITY

The trait approach to personality is one of the major theoretical areas in the study of personality. Unlike many other theories of personality, the trait approach to personality is focused on differences between individuals. The combination and interaction of various traits combine to form a personality that is unique to each individual. Traits are distinguishing qualities or characteristics of a person.

In general, trait theory assumes that people differ in the amounts of characteristics rather than differ in the quality of their characteristics.
GORDON ALLPORT’S TRAIT THEORY

In 1936, Psychologist Gordon Allport found that one English language dictionary alone contained more than 4000 words describing different personality traits. He was very much a trait theorist and believed in the individuality and uniqueness of the person and that people have consistent personalities. Allport attempted to blend nomothetic and idiographic perspective. He called this blend the morphogenic approach. He categorized these traits as Individual: traits possessed by one person. Common: traits possessed by many people.

Cardinal Traits

Traits that dominate an individual’s whole life, often to the point that the person becomes known specifically for those traits. People with such personalities often become so known for their traits that there names are often synonymous with these qualities. Consider the origin and meaning of the following descriptive terms: Freudian, Machiavellian, Narcissism, Don Juan, Christ like etc. Allport suggested that Cardinal traits are rare and tend to develop later in life.

Central Traits:

These central traits, while not as dominating as cardinal traits, are the major characteristics one might use to describe another person. Terms such as intelligent, honest, shy and anxious are considered central traits.

Secondary Traits: Traits that are sometimes related to attitudes or preferences and often appear only in certain situations or under specific circumstances i.e. getting anxious when speaking to a group of impatient while waiting in line.

Motivational Traits: These are very strongly felt traits.

Stylistic Traits: These are less strongly felt traits.

CREATIVITY AND PERSONALITY TRAITS

Personality traits have been studied in psychology since the very beginning of the science. Historically, we can even go back to “humors” that were supposed to govern personality in Plato’s time. It isn’t necessary to trace the history of personality traits, but it is necessary to define them: a personality trait is a learned pattern of behavior that an individual consistently exhibits.
Perseverance

Creative persons tend to become totally immersed in their work, forcing themselves to completion with a fierce determination. Creative persons are highly motivated to finish any work they start, often ignoring or dismissing other things until their work has been completed.

Tolerance for Ambiguity

Highly creative persons tend to have a strong tolerance for ambiguity. In other words, creative persons tend to be relatively more comfortable than noncreative persons in situations where there is little structure or where there are no clear directions or guidance as other persons need.

Internal Control

Creative persons tend to have an internal “Locus of control” which is a hypothetical center of control over one’s life, where a person feels such control is located. In general, we can characterize three types of locus of control: internal (as in people who feel they personally determine what happens to them) external as in people who believe that fate, luck, or “the odds” control what happens to them, and “external-powerful others” (as in people who feel life is controlled by teachers, politicians, bosses, etc.).

Risk-taking Ability

Creative people in general are more likely to take risks than less creative persons i.e. intellectual and emotional risks, and not physical risks. Creative people do not tend to play safe. If they did, their works would never be evaluated, and eventually appreciated by reviewers.

Sense of Humour

Creative persons by and large tend to have a strong sense of humor. On way psychologists characterize jokes and humorous situations is in terms of incongruities. In other words, humor is thought to result from a perception of things as being out of place, unusual, novel, or unexpected. Creative persons seem to have a powerful ability to see the humor in situations that many of us miss if we scrutinise literature on their works.
Capacity for Self-entertainment

Creative people have a great capacity for self-entertainment. While uncreative people become bored easily. Evidently they have a great ability for inventing their own form of amusement or activity in most boring situations.

Ability to Fantasize

Have the ability to totally immerse themselves in fantasy, turning off the outside world. Creative people are daydreamers and have the ability to totally immerse themselves in fantasy of life turning off from the world than most other people.

Focused Creativity

Creative persons are not necessarily creative in every facet of their lives. A highly creative writer may not necessarily have any creative abilities in music. A highly creative scientist may be a poor writer. True, some persons are creative in many or all facets of their lives, but this is unusual. All we know is that creative persons tend to excel in only one or two areas of their lives.

Capacity for Adopting Personal and unusual Problem-solving Strategies

Research indicates that the creative person tends to develop and apply unusual strategies in respective areas whether writing, painting or research, ultimately choosing one of the alternative solutions by flexible thinking.

Ability to See Complex Relationships

Some researchers, in fact, argue that much of what we call creative behavior is basically the ability to take two seemingly unrelated ideas and put them together in a novel and useful way.

Ability to Redefine and Elaborate Concepts

Creative people have the ability to redefine and elaborate ideas, situations, concepts, and problems in several ways and elaborate upon this redefinition. Without the ability to elaborate ideas and concepts, we are back at novelty without usefulness. Innovativeness or novelty is must for creative person.

ANXIETY

Anxiety is psychological and physiological state simply normal reaction to stress which create an unpleasant feeling of uneasiness, fear or worry for future and present danger.
It is a compound emotion and consists of two simpler emotions, each of the separate emotions is a mode. So anxiety is experienced either as anxiety (in the mode of fear) or as anxiety (in the mode of variety). People commonly experience feelings of anxiety before any important events in their lives.

When faced with danger, there is a reflex that causes physiological and mental arousal, allowing us to cope with the threat. This reflex action is beneficial in cases of real danger as it, in turn, increases the output of adrenalin that can increase our strength and speed, allowing us to react.

However, chronic anxiety reduces the quality of the sufferer’s life and can induce an overall feeling of ill-being. Any person suffering from an anxiety disorder feels a sense of anxiety that is completely out of proportion with the physical, mental, or emotional stimuli.

Anxiety is most simply defined as an acquired fear; for the moment we will employ the terms anxiety and fear interchangeably, although they are often used in somewhat different ways. Examples of anxiety are all around us: the student who is anxious about taking examinations; the businessperson’s anxiety about the financial future, the teen-age boy who is anxious about his appearance and sex appeal, and the child who wakes up anxious from a nightmare, in state of loss of companion or affection etc.

In addition to the fact that some situations can arise more anxiety than other. People differ widely in their tendency to become anxious in the face of the same threatening condition. Some people always seem to feel anxious about something or other. These differences among people are assumed to reflect differently in an anxiety trait or traits. A trait is a relatively enduring and rather general predisposition to display certain behavioral tendencies and can be estimated by the use of a variety of psychological tests.

THEORIES OF ANXIETY

In classical psychoanalysis, anxiety brought about by the conflict between the drives of the id and the attempted suppression of these drives by the superego and ego is the core problem of existence. Sullivan’s interpersonal theory makes a distinction between satisfactions and securities. Anxiety is not occasioned by drive frustrations but rather by fears of loss of love or rejection by significant adults. Learning theories,
especially in the Dollard-Miller period, focused upon anxiety as a drive that stimulates learning under certain conditions and interferes with it under other.

Goldstein approach anxiety intrinsically, cognitive, he maintained that we experience anxiety because we continually confront new situations that must be organized and integrated. This point of view broadens the scope of the concept without ignoring the importance of the parent-child relationships and calls attention to the tie between anxiety and growth or self-actualization. Maslow and May, whose humanistic and existential positions we discussed earlier, were both strongly influenced by Goldstein's orientation and they, too, emphasized the growth-related nature of anxiety as well as its more pathological implications. From the existential point of view, anxiety is closely related to the fear of a sterile life and of meaningless death.

Defining Anxiety in Scientific Research

The technical problems for psychologists studying anxiety have proved to be very complicated. Consider the case of someone who prefers to stay indoors when others are outdoors, who prefers reading to parties. Such an individual might be considered to be anxious about social situations by relatives and friends or by mental-health professionals. But if asked directly, this individual might deny any fear or anxiety and state that seclusion is a form of life that is personally convenient and congenial.

SIGNIFICANCE OF THE STUDY

In 1977, a Review Committee was appointed by the Government of India to review the whole curriculum. Review committed has emphasized the need of creative education without mincing words.

Our schools have been doing almost nothing to nourish the creative potential of children. When the child comes to school, he is full of eagerness, curiosity, and sensitivity. He strives to know each and everything about the world in which he lives. Excessive spoon-feeding snatch all the initiative from him. Teachers often think that creativity thinking leads only to trouble in the classroom. Children disturb classroom organization with their unusual ideas.

University of California and Berkley's researchers have found that good number of highly creative students are among the dropouts.
Though we can not transform each child into Einstein or a Shakespeare, we must accept the fact that every one is creative. The dire need is to identify this talent among individuals.

The present study intends firstly to find relationship between creativity and some psychological factors like anxiety and personality. Anxiety and creativity seems to go side by side. Organizational climate affects creativity and is often as palpable as the weather. It is essential that a creativity stimulating learning environment must be created in the school organization, in order that individual and group talent may be released and creative thinking can be encouraged.

According to Dewey, learning is development on experience. These educational and creative experiences are largely determined from the environment in which the learner live.

Unfortunately, organisational climate of schools is often inhospitable to these students. Students with emotional problems may never have their difficulties treated because many schools have inadequate psychological services. Highly mobile students may particularly suffer from inadequate administrative and support practices. Schools are often not prepared to address these problems.

Organizational climate has been defined as the “personality” of the school which can be created and maintained. The problem, then is one of identifying the dimensions affecting creative thinking.

According to Reyes and Laliberty, the “basic skills” approach to teaching literacy “dooms” students to a curriculum that lacks interest and relevance. Consequently, students have little motivation to learn. Other studies suggest that the creative and active learning in combination with “scaffolding” may enhance the learning of young people.

The present inquiry may provide empirical evidence of climate dimensions which can be used to help them determine the kind of climate that could be established in a school to enhance creative thinking among students.

According to Piaget (1952), the formal operational stage of intellectual development in children comes at the age of 12 and above. This is stage when child can think in abstract terms, follow logical propositions and reason by hypotheses.
Keeping in view the educational conditions and stands on our country and also the intellectual development of the child, the most appropriate age seems to be 15 and above. Therefore, the investigator decided to conduct a research study on creativity of senior secondary school students.

Creativity was the broad field of study from which the investigator had decided to select the problem. There is strong evidence which indicates that creativity does not just happen. The condition for creativity will have to be carefully nourished, if we want more creativity to be demonstrated. That is why, the investigator has chosen creativity as the major area of investigation under conditions which seem to be most relevant in the life field of an adolescent. It is evident that creative people possess certain personality traits and some psychological factors affect creativity. Keeping in mind, investigator decided to study personality factors and anxiety of senior school students as psychological factors.

Secondly, the child remains at school for a longer period during the day where the climate of school is seen to be the most significant in nourishing or inculcating the creative potential of the child. Within the constraints of time and space, the investigator decided to study the development of creative thinking in relation to these three areas. Therefore, the investigator delineates the present problem more clearly as under:

STATEMENT OF THE PROBLEM:

"A STUDY OF CREATIVE THINKING AMONG SENIOR SECONDARY SCHOOL STUDENTS IN RELATION TO PSYCHOLOGICAL FACTORS AND ORGANIZATIONAL CLIMATE"

OPERATIONAL DEFINITION OF THE TERMS

Creativity

Creativity is characterized by novel and appropriate ideas. For present study, creativity is defined as ability of fluency, flexibility and originality as measured by verbal test of creative thinking by Baquer Mehdi.

Fluency

It reflects the subject's ability to produce a large number of ideas.
Flexibility

It indicates the number of distinct and different ways in which an individual can respond to a stimulus. Quantitatively, it is a measure of variety. Thus the number of different classes of ideas or things determines the numerical value of flexibility.

Originality

It indicates uncommonness or newness in the product. A response that may be considered as original must represent some break away from the obvious, the common place and the banal (Torrance, 1974).

Personality

Personality, in the present study, can be defined as a construct of some traits as measured by R.B. Cattell’s 16 Personality Factors-- are warmth, Reasoning, Emotional stability, dominance, liveliness, Rule consciousness, social boldness, sensitivity, vigilance, Abstractedness, Privateness, apprehension, openness to change, self-reliance, Perfectionism, Tension.

Anxiety

Anxiety is the sense of uneasiness in any situation where the person’s vanity is undermined, fear arises. Anxiety increases the intensity of a person’s reaction to any situation.

Organizational Climate

Organizational climate is the process of quantifying the “culture” of an organization. It is a set of properties of the work environment, perceived directly or indirectly by the employees, that is assumed to be a major force in influencing employee behaviour.

OBJECTIVES OF THE STUDY

Objectives

1. To study the incidence of creative thinking among Senior Secondary School Students.
2. To study the relationship of creativity of senior secondary school students with their anxiety.
3. To study the relationship of creativity of senior secondary school students with their personality factors.
4. To study the relationship of creativity of senior secondary school students with organizational climate and its dimensions.
5. To compare male and female senior secondary school students on fluency as a factor of creative thinking.
6. To compare male and female senior secondary school students on flexibility as a factor of creative thinking.
7. To compare male and female senior secondary school students on originality as a factor of creative thinking.
8. To compare male and female senior secondary school students on creativity as a whole.
9. To compare rural and urban senior secondary school students on fluency as a factor of creative thinking.
10. To compare rural and urban senior secondary school students on flexibility as a factor of creative thinking.
11. To compare rural and urban senior secondary school students on originality as a factor of creative thinking.
12. To compare rural and urban senior secondary school students on creativity as a whole.
13. To identify the role of personality factors (A, B, C, E, F, G, H, I, L, M, N, O, Q₁, Q₂, Q₃, Q₄), Anxiety, organizational climate and its dimensions (disengagement, aloofness/alienation, espirit, intimacy, psycho-physical hindrance, consideration/controls, production-emphasis and humanized thrust) in determining creativity among senior secondary school students.
14. To identify the role of personality factors (A, B, C, E, F, G, H, I, L, M, N, O, Q₁, Q₂, Q₃, Q₄), Anxiety, organizational climate and its dimensions (disengagement, aloofness/alienation, espirit, intimacy, psycho-physical hindrance, consideration/controls, production-emphasis and humanized thrust) in determining fluency among senior secondary school students.
15. To identify the role of personality factors (A, B, C, E, F, G, H, I, L, M, N, O, Q₁, Q₂, Q₃, Q₄), Anxiety, organizational climate and its dimensions
(disengagement, aloofness/alienation, espirit, intimacy, psycho-physical hindrance, consideration/controls, production-emphasis and humanized thrust) in determining flexibility among senior secondary school students.

16. To identify the role of personality factors (A, B, C, E, F, G, H, I, L, M, N, O, Q₁, Q₂, Q₃, Q₄), Anxiety, organizational climate and its dimensions (disengagement, aloofness/alienation, espirit, intimacy, psycho-physical hindrance, consideration/controls, production-emphasis and humanized thrust) in determining originality among senior secondary school students.

**HYPOTHESES**

1. There is no significant relationship between creativity and anxiety of senior secondary school students.

2. (a) There is no significant relationship between creativity and personality factor A (Reserved Vs Outgoing as scored on 16 PF) of senior secondary school students.

   (b) There is no significant relationship between creativity and personality factor B (Less Intelligent Vs More Intelligent) of senior secondary school students.

   (c) There is no significant relationship between creativity and personality factor C (Affected by Feelings Vs Emotionally Stable) of senior secondary school students.

   (d) There is no significant relationship between creativity and personality factor E (Humble Vs Assertive) of senior secondary school students.

   (e) There is no significant relationship between creativity and personality factor F (Sober Vs Happy-go-Lucky) of senior secondary school students.

   (f) There is no significant relationship between creativity and personality factor G (Expedient Vs Conscientious) of senior secondary school students.
(g) There is no significant relationship between creativity and personality factor H (Shy Vs Venturesome) of senior secondary school students.

(h) There is no significant relationship between creativity and personality factor I (Tough minded Vs Tender minded) of senior secondary school students.

(i) There is no significant relationship between creativity and personality factor L (Trusting Vs Suspicious) of senior secondary school students.

(j) There is no significant relationship between creativity and personality factor M (Practical Vs Imaginative) of senior secondary school students.

(k) There is no significant relationship between creativity and personality factor N (Forthright Vs Shrewd) of senior secondary school students.

(l) There is no significant relationship between creativity and personality factor O (Placid Vs Apprehensive) of senior secondary school students.

(m) There is no significant relationship between creativity and personality factor $Q_1$ (Conservative Vs Experimenting) of senior secondary school students.

(n) There is no significant relationship between creativity and personality factor $Q_2$ (Group Dependent Vs Self Sufficient) of senior secondary school students.

(o) There is no significant relationship between creativity and personality factor $Q_3$ (Undisciplined Self-Confident Vs Controlled) of senior secondary school students.

(p) There is no significant relationship between creativity and personality factor $Q_4$ (Relaxed Vs Tense) of senior secondary school students.

3. There is no significant relationship between creativity and organizational climate of senior secondary schools.
(a) There is no significant relationship between creativity and disengagement as a dimension of organizational climate of senior secondary schools.

(b) There is no significant relationship between creativity and aloofness as a dimension of organizational climate of senior secondary schools.

(c) There is no significant relationship between creativity and espirit as a dimension of organizational climate of senior secondary schools.

(d) There is no significant relationship between creativity and intimacy as a dimension of organizational climate of senior secondary schools.

(e) There is no significant relationship between creativity and psycho-physical hindrance as a dimension of organizational climate of senior secondary schools.

(f) There is no significant relationship between creativity and consideration as a dimension of organizational climate of senior secondary schools.

(g) There is no significant relationship between creativity and production-emphasis as a dimension of organizational climate of senior secondary schools.

(h) There is no significant relationship between creativity and humanized-thrust as a dimension of organizational climate of senior secondary schools.

4. There is no significant difference between male and female senior secondary school students on fluency as a factor of creative thinking.

5. There is no significant difference between male and female senior secondary school students on flexibility as a factor of creative thinking.

6. There is no significant difference between male and female senior secondary school students on originality as a factor of creative thinking.

7. There is no significant difference between male and female senior secondary school students on creativity as a whole.
8. There is no significant difference between rural and urban senior secondary school students on fluency as a factor of creative thinking.

9. There is no significant difference between rural and urban senior secondary school students on flexibility as a factor of creative thinking.

10. There is no significant difference between urban and rural senior secondary school students on originality as a factor of creative thinking.

11. There is no significant difference between rural and urban senior secondary school students on creativity as a whole.

12. Personality factors, anxiety, organizational climate and its dimensions will have significant role in determining creativity among senior secondary school students.

13. Personality factors, anxiety, organizational climate and its dimensions will have significant role in determining fluency among senior secondary school students.

14. Personality factors, anxiety, organizational climate and its dimensions will have significant role in determining flexibility among senior secondary school students.

15. Personality factors, anxiety, organizational climate and its dimensions will have significant role in determining originality among senior secondary school students.

DELIMITATIONS OF THE STUDY

1. The geographical area of the study has been delimited to the senior secondary schools of Rohtak district in Haryana.

2. Only 300 adolescents have been selected on multi-stage random basis.

3. Since creativity covers a wide area, the research has been delimited to verbal creativity; only three components of creativity viz.: fluency, flexibility and originality have been taken into consideration for the requirement of the study. It was decided to use ‘Verbal Test of Creativity Thinking by Baquer Mehdi.’

4. Anxiety was measured only on those aspects which are covered by Sinha’s Comprehensive Anxiety Test (SCAT).
5. As the scope of personality is vast, it was not possible to go beyond available personality tests. Hindi version of 16 PF by S.D.Kapoor has been taken to assess personality of subjects under study.

6. School Organizational Climate Description Test by Moti Lal Sharma was found most suitable to study the organizational climate of senior secondary schools in Indian contexts. It was not possible for the investigator to investigate all the aspects of organizational climate. So the study was confined to see the relationship of creativity and organisational climate and its eight dimensions and the role of organizational climate and its eight dimensions in determining creativity.

RESEARCH DESIGN

Descriptive method is concerned with the present conditions, situations, events and practices and deals with relationship among variables. It mainly uses the descriptive method to study creative thinking among senior secondary school students in relation to psychological factors and Organizational Climate.

VARIABLES OF THE STUDY

Variables of a study are of two types:

A. Dependent Variables

The dependent variables are the conditions or characteristics that appear, disappear or change as the investigator introduces, removes or changes independent variable. In the present investigation, the dependent variable of the study refer to creativity and it's factors.

B. Independent Variables

An independent variable is the condition or the characteristics that the investigator observes or controls in attempt to ascertain its relationship to observed phenomena. The independent variables of the study in hand refer to various conditions, characteristics and factors related to-

1. Personality
2. Anxiety and
3. Organizational Climate.
The present investigation attempts to study the relationship of dependent variable, that is, creativity in relation to independent variables, i.e., personality, anxiety and organizational climate.

SAMPLE OF THE STUDY

In the present study, 300 senior secondary school students of Rohtak district in the State of Haryana formed the sample.

The Sampling Technique used

In the present study, the multistage random sampling technique has been used to select the subjects from the population. A list of Govt. and non-Govt. Sr. Sec. Schools was obtained from the concerned District Education Officer of district Rohtak and 30 schools (15 rural and 15 urban) were selected randomly. Further, from each school the students were also selected randomly by adopting lottery system. The stratification of the sample is as follows:

FIGURE

![Diagram of sample stratification]

FIG. : SAMPLE

So far as teachers are concerned, all teachers teaching senior secondary classes were taken into consideration.
TOOLS USED

Findings of any research study are based on data collection; data collection, in turn, depends on the tool used. The research tools should have reliability, validity, availability, appropriateness, ease in administration, scoring and objectivity.

Keeping in view the above, the following tools which were readily available and suited the requirements of the study in hand and had also been tested on the touchstone of various test requirements on reliability, validity etc. by their authors, were preferred to be employed for collection of the data for the study.

1. Verbal Test of Creative Thinking (T.C.W) by Baquer Mehdi.
2. 16 P.F. Test form A by R.B. Cattell.
3. Sinha's Comprehensive Anxiety Test (Dr. A.K.P Sinha and Dr. R.P. Singh)
4. School Organizational Climate Description Questionnaire (SOCDQ) developed by Motilal Sharma.

COLLECTION OF DATA

After the selection of tools, the investigator visited the selected schools of district-Rohtak. To ensure quick and complete return of questionnaire, they were personally given to the selected sample of students and teachers of senior secondary schools. Before, giving the questionnaires, proper rapport was established with the subjects. Then, the purpose of the questionnaire was explained to them. The students and teachers were assured that the present questionnaires were meant for the research purpose and would not affect them in any way.

STATISTICAL TECHNIQUES USED

The data after collection, has to be processed and analysed in accordance with the outline laid down for the purpose at the time of developing the research plan. This is essential for a scientific study and for ensuring that we have all relevant data for making contemplated comparisons and analysis. Technically speaking, processing implies editing, coding, classification and tabulation of the collected data so that they are amenable to analysis. Thus, "in the process of analysis, relationships of different supporting or conflicting with original or new hypotheses should be subjected to
statistical tests of significance to determine with what validity the data can be said to indicate any conclusions”.

Having obtained the data representing the variables in the study, its proper statistical organization and processing is needed. It makes the data meaningful and understandable. The statistical techniques which were chosen keeping in view the requirements of the objectives and hypotheses of the study used in the analysis of data in the present investigation are given below:

- **Mean**: It has been used to describe the average of an entire sample of scores.
- **S.D.**: The standard deviation, a measure of variability, is a measure of the extent to which scores in distribution, on an average, deviate from their mean.
- **Graphical Technique**: Bar diagram has been used wherever required.
- **Correlation Co-efficient**: The Pearson ‘r’ correlation co-efficient has been used to study the linear relationship between two variables. In the present study, Pearson’s ‘r’ correlation co-efficient has been used to study the relationship between creativity, 16 personality factors, anxiety, organizational climate and its 8 dimensions.
- **Stepwise multiple regression**
  Stepwise multiple regression has been used to identify the role of 16 personality factors, anxiety, organizational climate and its 8 dimensions in determining creativity.

**‘t’-test**

The test of significance between two means is known as ‘t’ test. It involves computation of ratio between observed differences between two sample means and the error variance (the sampling error factor). To compare the different subjects in terms of creativity between male/female and rural/urban the ‘t’ test has been used in this study.

**MAIN FINDINGS**

1. A significant negative correlation was found between creativity and anxiety. The higher the anxiety, the lower the creativity and vice-versa.
2. A significant negative correlation was found among creativity and personality factors A and B. It means the students who were reserved, detached, critical,
aloof, stiff and less intelligent were found to be less creative. Further a significant positive correlation was found among creativity and personality factors C, F, H, I, L M, N, Q1, Q2, Q3, Q4. It can be concluded that highly creative students were found to have higher ego strength and dominance. They are happy-go-lucky, venturesome sensitive, suspicious, Imaginative, socially aware, experimenting, self-sufficient controlled, and tense. No significant correlation was found between creativity and personality factors E, G and O.

A significant positive correlation was found between creativity and organizational climate & some of its dimensions viz. climate, disengagement, espirit, intimacy, production emphasis, humanized thrust, consideration and creativity. It means creativity is positively affected by organizational climate and its dimensions except aloofness and psycho-physical hindrance. These two factors were not significantly related to creativity. Teacher’s behaviour affects the creative potential of students. Highly creative students have been found to be disengaged with the task in hand as they have their own independent way of thinking. Creativity is positively affected by the organization where teachers feel that their social needs are being satisfied and they enjoy a sense of accomplishment in their job. They have friendly mutual relations. Principal motivates the staff to move the organization smoothly through his own task-oriented behaviour, he is thrustfully bureaucratic in nature, although task-oriented-by providing guidance and secretarial services to achieve common goals.

A significant difference was found between male and female senior secondary school students on fluency as a dimension of creative thinking. Female students were found to possess more fluency as compared to male students.

A significant difference was found between male and female senior secondary school students on flexibility as a dimension of creative thinking. Female students were found to possess more flexibility as compared to male students.

A significant difference was found between male and female senior secondary school students on originality as a dimension of creative thinking. Female students were found to possess more originality than their male counterparts.
A significant difference was found between male and female senior secondary school students on creativity as a whole. Female students were found to be more creative than male students.

No significant difference was found between rural and urban senior secondary school students on fluency as a dimension of creative thinking.

No significant difference was found between rural and urban senior secondary school students on flexibility as a dimension of creative thinking.

No significant difference was found between rural and urban senior secondary school students on originality as a dimension of creative thinking.

No significant difference was found between rural and urban senior secondary school students on creativity as a whole.

Espirit (as a dimension of organizational climate) turned out to be the most important predictor of creativity. Personality Factor C (affected by feelings Vs emotionally stable) turned out to be the second important predictor of creativity. Anxiety turned out to be the third important predictor of creativity. Personality factor Q_4 (Released Vs Tense) turned out to be fourth important predictor of creativity. Humanized-thrust (a dimension of organizational climate) turned out to be the fifth important predictor of creativity. Personality factor Q_3 (undisciplined Vs controlled) turned out to be the sixth important predictor of creativity. Personality factor A (Reserved Vs outgoing) turned out to be the seventh important predictor of creativity. Urban/rural (residential background) turned out to be the eighth important predictor of creativity. Production-emphasis (dimension of organizational climate) turned out to be the last important predictor of creativity.

Espirit (a dimension of organizational climate) turned out to be the most important predictor of fluency. Personality factor C (affected by feelings Vs emotionally stable) turned out to be the second important predictor of fluency. Personality factor Q_4 (Relaxed Vs Tense) turned out to be the third important predictor of fluency. Organizational Climate turned out to be the fourth important predictor of fluency. Production-emphasis (a dimension of organizational climate) turned out to be the fifth important predictor of fluency. Anxiety turned out to be the sixth important predictor of fluency.
Personality factor O (Placid Vs apprehensive) turned out to be the seventh important predictor of fluency. Personality factor A (Reserved Vs Out going) turned out to be the eighth important predictor of fluency. Personality factor B (Less intelligent Vs more intelligent) turned out to be the ninth important predictor of fluency. Rural/urban (residential background) turned out to the tenth important predictor of fluency. Personality factor Q\textsubscript{3} (undisciplined Vs controlled) turned out to be the least important predictor of fluency.

14. Espirit (a dimension of organizational climate) turned out to be the most important predictor of flexibility. Personality Factor C (affected by feelings Vs emotionally stable) turned out to be the second important predictor of flexibility. Anxiety turned out to be the third important predictor of flexibility. Humanized-thrust (a dimension of organizational climate) turned to be the forth important predictor of flexibility. Personality factor Q\textsubscript{4} (Released Vs Tense) turned out to be fifth important predictor of flexibility. Personality factor Q\textsubscript{3} (undisciplined Vs controlled) turned out to be the sixth important predictor of flexibility. Urban/rural (residential background) turned out to be the least important predictor of flexibility.

15. Espirit (a dimension of organizational climate) turned out to be the most important predictor of originality. Anxiety turned to be the second important predictor of originality. Personality factor Q\textsubscript{4} (Relaxed Vs Tense) turned out to be the third important predictor of originality. Personality factor C (affected by feelings Vs emotionally stable) turned out to be the fourth important predictor of originality. Personality factor A (Reserved Vs outgoing) turned out to be the fifth important predictor of originality. Humanized-thrust (a dimension of organizational climate) turned to be the sixth important predictor of originality. Production-emphasis (a dimension of organizational climate) turned out to be the seventh important predictor of originality. Rural/urban (residential background) turned out to the eighth important predictor of originality. Personality factor B (Less intelligent Vs more intelligent) turned out to be the least important predictor of originality.
CONCLUSIONS

On the basis of above findings following conclusions have been drawn by the investigator:

The study shows a significant negative correlation between anxiety and creativity which indicates that the higher the anxiety the lower the creativity and vice-versa. Further it can be concluded that students who scored less on personality factors A and B were found to be less creative. Students who were reserved, detached, critical, aloof, stiff and less intelligent were found to be less creative. Organizational climate and its dimensions except aloofness and psycho-physical hindrance were found to be positively correlated with creativity. Students possess higher creative thinking abilities in organizational climate where social needs are fulfilled, sense of accomplishment have been enjoyed, friendly mutual relations among teachers have been established and motivation boosts up the morale to achieve common goals.

DISCUSSION OF RESULTS

As evident from the above stated findings, girls have been found to be more creative, more fluent, more flexible and more original than boys. These results of the present investigation are in consonance with the findings of Singh (1978); Mishra K.S. (1982); Raina, M.K. (1986); Richardson (1986) and Stimpson (1986). These studies revealed that girls possess higher lend of word fluency, expressive fluency, spontaneous flexibility and originality than boys. Girls excelled boys in overall scientific creativity Boys were observed to be less creative than girls.

This study investigated relationship between creativity and personality factors and found that personality factors C,F,H,I,L,M,N, Q1, Q2, Q3, Q4, were significantly positively related to creativity. Personality factors E,G,O have no relationship with creativity and the two personality factors A and B have negative relation with creativity. The findings of Rama Devi, M and Subrahmanyam (1994) are consistent with these findings. They concluded that creativity and personality factors B, E, F, H and Q4 were positively correlated with each other.

The present study also established significant positive correlation between creativity and organizational climate. This finding is in agreement with the findings of Mishra, K.S. (1982), Dubey Sushma(1986), Rajgopalan, S (1988), Pardhan, C
(1991) and Thabor, R (2004) by stating that significant relationship exists between school environment and originality among boys, school education environment was found to have significant positive main effects on creative thinking among students, further it was confirmed by them that high classroom climate was found effective on the high creative level of students, school organizational climate was found to be significantly affecting the student’s score of creativity, a significant difference was found among students belonging to schools with different organizational climates in their creative thinking ability.

Studies in Contradiction

One of the findings of the present investigation revealed that female students scored higher on creativity as compared to male students. This finding is in contradiction with finding of Arora G.L. (1978) which states that males and females did not differ significantly on creative thinking. Sex did not contribute significantly to the variance in creativity scores. Sharma, A.K. and Singh, Gurpal & Jarial (1981) also have contradiction with this finding by stating that no significant differences were found by them in the total creativity score of male and female students. This study found significant negative relationship between creativity and anxiety. The study of Badola, S (1991) found positive and significant relationship between high creativity and anxiety in respect of creative students. Sharma, R.V. (1985) investigated and found the same by stating that high creative teachers were found to be significantly more anxiety ridden than the low creative ones. Further this study found positive and significant relationship between creativity and organizational climate. The study of Sharma, K (1982) contradicts this finding by stating that organizational climate of the school was not found to be related to creativity in students.

EDUCATIONAL IMPLICATIONS

Creativity is an essential human phenomenon it is important process for the progress and major advance in every field. All the advances are made as a result of new ideas or creative process. The scientific and technological advancement as today is a long journey from stone age to the space age. Creativity is one of the most highly valued qualities of human beings. In the present day we have to deal with day to day
problems. Old solutions are not working. To explore creative potential is the necessity of the day.

This study will prove beneficial for teachers, parents school administrators, policy planners, teacher educators, researchers as well as for curriculum developers.

Parents at home and the teachers in classroom situations always have the opportunity for nurturing the creativity in students. They may channelize a child’s creative energy into constructive dimension. They should not block their divergent thinking. But they should act as facilitators for the same. Student’s unusual ideas must be welcomed at home as well as in classrooms, rather their unusual ideas should be kept in record. Teachers and parents should give such type of environment to children so that they can touch the edge of their imagination. Their original responses should be welcomed and they should be encouraged to bring the solutions or ideas which have not been expressed by someone else. Their curiosities should be satisfied. In classrooms students should be free to ask any question from the teacher. Parents should also try to satisfy every unusual query of the child. They should not snub child’s curiosity in the name of discipline. Classroom situations should be made free from rigid plannings. Let the children be free from anxiety and to play with their imaginations. Boys should be encouraged to be divergent in their thinking.

Because man is created by God in his own image there exists some creative attributes in him which enable him to possess the capacity and capability to think and act creatively. Every child is creative to some or the large extent this is evident from the findings of this study. To nurture creativity in students there is a need to have educational system where aims, curriculum, instructional material, methods of teaching, system of promotions are based upon divergent thinking in combination with convergent thinking. Creative potential among students in our schools has been suppressed due to rigid and hectic academic programmes. Students in classes do not have freedom to respond which is very much essential for creative expression. Teachers and parents themselves are not creative because their creativity was not allowed to express at their school time. Unless and until teachers use creativity in their teaching, may be in methods or aids, it will be difficult for them to accept importance of inculcation of creativity in students.
This study showed significant negative correlation between creativity and anxiety. Our education system in schools should be like a place where students are free from anxiety. So our aim of education, curriculum, methods of teaching and especially examination system should be reformed. Organizational climate is significantly correlated with creativity which is evident from the results of this study. So it should also be a matter of emphasis while considering whole educational system. Moreover, espirit of teachers as a dimension of organizational climate proved to be a significant predictor of creativity in students. It should be ensured in school system that teachers feels that their social needs are being satisfied and at the same time they are enjoying a sense of accomplishment in their job. Only after the reframed educational system with the provisions of differential promotions, provision of special classes and special schools, enriched, interesting and diversified curriculum, new and innovative methods of teaching like heuristic approach, project method and scientific inquiry techniques be adopted keeping in view the individual differences in specific creative talent.

SUGGESTIONS FOR FURTHER STUDY

1. The study needs to be replicated on a large sample from different parts of the country and at different age levels to confirm the findings of the present investigation.
2. Study may be conducted on personality factors of award winners in the field of music, classical dance, painting, architecture, science and mathematics.
3. A Study may be undertaken to explore the personality factors of creative teachers and non-creative teachers.
4. A study may be undertaken to explore the influence of type of organizational climate affecting creativity.
5. A longitudinal study may be conducted to chart the level of anxiety affecting creativity among adolescence.
6. A study may be undertaken to find out the role of motivation in enhancing creative thinking among adolescents.
7. A study may be conducted to observe the role of appreciation and social recognition to foster creativity among students.
8. A study may be conducted to observe the role of intuition and imagination in enhancing creativity.

9. A study can be undertaken to probe the difference of the level of anxiety between creative and non-creative students.

10. A study may be undertaken to observe the effectiveness of pampering behaviour of parents on child's creativity.

11. A cross-cultural study may be conducted on creative thinking in relation to socio-cultural factors and role of heredity.

12. A study may be undertaken to probe the difference of problem solving ability of creative and non-creative students in relation to psychological factors.

13. Effect of Teacher's creative thinking on students learning behaviour and achievement may be observed.

14. A study may be undertaken to observe creative thinking and social adjustment among students.

15. A study may be conducted on creativity and personality factors of drama writers.

16. A study may be conducted on creativity in relation to leadership behaviour and parental style of child rearing.

17. Effect of type of organizational climate on teachers' creative thinking may be observed.

18. Role of opportunities and classroom freedom given to students to enhance their creative thinking may be observed.

19. Social adjustment of high creative school dropouts may be observed.

20. A study may be undertaken to record the correlates of creativity and truancy.

21. A study may be conducted to see whether it is possible to enhance reasoning abilities of students through intensive training programmes aimed to cultivate creative potential of the students. Experimental studies may be taken up to evaluate the effectiveness of such training programmes.