Introduction
Chapter: 1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The goal of education can no longer be the transmission of the larger chunk of knowledge as such that to equip the students with intellectual tools and resource which would enable him to involve in the process of gaining the existing knowledge and creating new knowledge. Psychologists have suggested instruction or teaching be regarded and as “temporary arrangement”, intended to “enhance the learner’s capacity to learn for himself”.

Motivation seems important as factors in the instigation of behavior, essential for an organism to learn. Motivational states also may determine the effectiveness of ‘rewards’ for what the organism does, again an apparently influential factor for learning. Motivation may have something to do with what learned act will be exhibited in a given situation, that is, what features of the organism’s acquired repertory will be instigation, the rewards and the display of behavior and in all of these aspects it is intimately related to the learning process.

One of the most crucial problems of education is how to cater to the individual differences and maximize learning. Teaching is made adaptive to the differences which exist among learners with regard to their style of perceiving, capacity for independent work, willingness, level and span of attention. In classroom situation
children also demonstrate how they concentrate upon, observe and retain different types of information.

In a view ‘style’ refer to pervasive quality in the behavior of an individual, a quality that persists though the content may change. In short, people can be identified with distinctive qualities of behavior that are consistent through time and carry over from situation to situation. It is important to know about the learning styles of students and how academic achievement is related to their learning styles. Dunn and Dunn (1978), found it as “We first became involved with the phenomenon help slow learners narrow the gap between their ability to read and the grade level expectations help for them”.

Learning style show the different ways in which learners can learn effectively. There are various learning styles of students, which will, of differences in learning styles are thus major determinants of the kind of approaches that work best with different students as do learn in various ways. Classroom observations evidence that student differ in their reaction time, in the amount encouragement they need to attack a learning taks; in terms of amount, frequency and type of motivation they require; in the way in which they deal with a given task; and so on.

Holt (1967) upholds that “children have a style or learning that fits their condition, and which they use naturally and well until we train them out of it. We send children to school to teach them to think. What we do, all too often, is to teach them to think badly, to
give up a natural and powerful way of thinking in favour of a method that does not work well for them and that we rarely use ourselves”.

Galloway (1976) narrates, “the teacher must be effective at teaching especially for those children whom he identifies as poor learners since poor learning usually follows from ineffective instruction”. The effective instruction is a major contributor is ineffective. Thus, question emerges as to how a teacher could become effective for each of his students.

Hamachek (1979) favours the same view and says that, “we are finally beginning to realize that in order to assist each pupil and capitalize on his natural inclination to understand we must first be able to not only diagnose his styles of learning but accept it also.”

Kolb (1981) argues that, “learning style is a result of hereditary equipment, past experience, and the demands of the present environment combining to produce individual orientations that give differential emphasis to the four basic learning modes postulated in experiential learning theory: concrete experience; reflective observation; abstract conceptualization, and active experimentation.”

Student differ in respect of their learning style preference. It has received much of the attention of the educationists now and has acquired an independent status, where much work has to be done. Student’s learning styles and his achievement besides other factors, affects almost all spheres of student’s development. It also affects greatly the quality of student’s achievement. Information from various sources indicates that much creative talent goes unrecognized
in our schools. Therefore, it is felt by the society, educators and the investigators that the achievement of student must be identified, developed and utilized.

In education, where learning styles in relation to academic achievement have been neglected too much in both teaching and testing, it is desirable to assess each individual’s academic achievement and learning style in order to determine how these learning styles can be used in improving academic achievement of the students. Our educational institutions take into account basic human differences in learning, thinking and creative expression to seek better means of individualizing instruction for more effective learning. There are certain physical and environmental variable which influence learning styles of students. Researches like Canfield and Lafferty(1970); Dunn and Dunn (1978); Kolb (1981); Bown (1985); Carney (1986); Kapadia (1988); Yount (1989); Magolda (1989); and Ginter (1990); have thrown much light in the area of learning styles and have found it a very potential one in influencing student learning.

Creativity is another variable, which is one of the most valued human qualities. It is that potentiality which foster the development of the society through self actualization of its members. No nation can aspire without creative individuals to complete with others in matters of discovery invention, exceptional manifestation of poetry, drama, art, painting and the like. Creativity is natural human process, and needs are involved at each stage. Researches done by Taylor
(1978); Toth (1987); and Bal (1989) on creativity, show a correlation between learning style and creativity. Able (1989), also found a strong relationships among motivation measures and family variables and academic achievement.

1.2 RATIONALE OF THE STUDY

Why is it that some students study and others do not? Why is it that some want to learn and try to learn while others apparently have little or no interest in doing so? Why for that matter, does anyone do anything? Most human behavior, in the classroom or elsewhere, has as its purpose the satisfaction of one or another or some. Anything that contributes to the satisfaction of needs is said to be reinforcing. Strictly speaking, there is no such thing as an unmotivated student or a person in any walk of life who lacks motivation. All human beings always motivated in that we all have needs, we all have goals, we all have essentially the same kinds of needs and the same kinds of goals. But we differ in the ways we choose to satisfy them and in our perceptions of what constitutes satisfaction.

Thus, every student is motivated but not necessarily to learn to do what his teachers would like him to do. The goals he wishes to pursue in the classroom. The manner in which he attempts to satisfy in the classroom. This is why we have motivation “problems”. To help students who are not highly motivated toward scholastic achievement, it might well be consider the goals of those who are highly motivated.
At the high school and college level, when careers are becoming a matter of some concern, the practical value of subjects are likely to be called in question. It is then that students are more likely to ask "what good" certain subjects are. If they see the use of subject in relationship to their vocational goals, chances are they will work at it. Ordinarily when students perceive this value, they are motivated to learn the subject; when they do not, they are not. Most teachers would love to have room full of intrinsically motivated students, eager to learn simply for the love of learning. But many teachers, particularly in upper elementary grades and beyond, encounter few such individuals in their classes. Many teachers, therefore, find out one of their most challenging problem is that of arousing their students, interest, gaining and holding their attention, and some how prevailing upon them to set forth at least to a little effort in learning the material they are not exactly overjoyed at the prospect of learning it. The two basic strategies that teachers employ in attacking the motivation problem centre around the concepts of interest and incentives. In teaching, the teacher is faced with wide variations in their preferred modes of thinking, process, and acting, as well as with the range of their interests, motives, values and aptitudes. The problem has been further compounded by the fact that he, too has his preferred modes of thought and probably gives unwriting stress to them in his teaching, thus, appealing more to some students than to others.
In a particular learning situation, the individual is surrounded by a host of potential stimuli, he however, cannot attend to all of them and responds to them selectively and his particular learning style determine those environmental stimuli to which attends. A student’s style determines his utilization of his intellectual abilities. Thus, individual is peculiar in the choice of his pattern of learning, therefore, each individual demonstrates a set new unique learning style.

There are major differences in learning style from one student to another and these differences can have a significant bearing on classroom learning. Individual’s learning style and his creative ability, besides other factors, affects almost all spheres of student’s development.

Investigators have found that learning environment of an institution and learning styles of student greatly affect the quality of student achievement. Information from various resources indicate that much creative and investigators that creative talent must be identified, developed and utilized by the society.

Many researches have been conducted on creativity which have potential to improve the educational system in various ways. It provides instruments for measuring creative potentialities, interests and motivations; thus enabling the schools to adopt their program to the understanding that emerge from this measurement. In education, where creative qualities have been neglected too much in
both teaching and testing, it is desirable, to assess each individual’s creative potential and learning style in order to determine how these learning styles can be used in development this potential. Each individual acquires various characteristics and qualities of an environment to which he is exposed. However, these learning environments do influence the respective ways of student’s learning and result in developing different learning styles among student. Education environments affect human differences in learning, thinking and creative expression to seek better means of individualizing instructions for more effective learning.

Messick (1976) says, “— that difference in style of leaning and thinking also require the attention of educators and researchers. Concern about difference in prior learning and achievement and in level of learning to more suitable difference in the process of cognition and creative thinking to find effective basis for individualized education.”

Recent researches studies have indicated that student’s academic achievement is also related to the variables like creativity and learning styles. Although studies have shown that each of these variables taken separately, are related to academic success, the results of many these studies are inconsistent. Moreover, there are no studies which examine the combined effects of these variables on student achievement.
Toth (1987) found that the assessment of creativity, laterality, and learning style preferences, together with traditional mental measures, can provide educators with a more holistic approach to the identification of individual student learning patterns for the purpose of enhancing student academic achievement.

It is evident from above descriptions that students may be effectively characterized in terms of learning styles, creativity, motivation and academic achievement. Learning styles encompass the perceptual as well as intellectual functioning of a student comprehensively. A study of learning placement and teaching methods in the teaching learning process. It will also help in determining the methods of teaching that are more effective for children with specific cognitive characteristics.

Motivation is an important factor for student to learn. Motivational states also may determine the effectiveness of rewards for what child does, again an apparently influential factor for learning. “Creative activities and ways of learning seem to have a built-in motivation power. Positive reinforcement and external rewards seem necessary, though not inimical, to creative learning. In fact, motivation to learn in creative ways sometimes continues inspite of discouragement of negative reinforcement.” (Torrance and Myers, 1970).
1.3 NEED AND IMPORTANCE OF THE STUDY

Though a lot of work has been done in the area of leaning style abroad, such has been conducted in India except a few. The researches found, this area very challenging one. Now a days, knowledge is multiplying day by day; when new methodologies, strategies and techniques are being explored; where new approaches and systems are being invented; where new models are being initiated to redesign and reshape the prevailing academic environment in institutions to keep pace with the increasing knowledge in each sphere; where educational literature is being enriched by new making learning more promising and maximally effective to the learner by making instruction individualized. Nevertheless, the students, their needs, capabilities, special interests and motivation, and their styles of learning; which together are the bases to all decisions about individualizing learning activities.

Investigations may be seen in the area of student-interest, student-attitude, student-mental ability and in other related aspects, but no research work has been evidenced in the area of leaning styles, comprising motivation, achievement and creativity as different variables which is very important aspect in influencing student-leaning.

Thus, the research in the area of learning styles surfaces to be the most important and indispensible because it does affect to greater extent the achievement of students. The differences between learning style of different students cannot be taught in the same manner. the
teacher should adopt those teaching strategies which arise in consonance with learning styles of students. The researcher is curious to find out the relationship between learning styles, achievement, motivation and creativity.

1.4 STATEMENT OF THE PROBLEM

Specifically stated the problem of the study is “Motivation, Learning Style, and Academic Achievement of High creative and Low-creative Junior high school Students”.

1.5 OBJECTIVE OF THE STUDY

Based on above premises, the following objectives of the present study have been delineated:

1. To find out the learning styles of high creative students.
2. To find out the learning styles of low creative students.
3. To compare the learning styles of high creative and low creative students.
4. To find out the motivational pattern of high creative students.
5. To find out the motivational pattern of low creative students.
6. To find out the motivational pattern of high creative students and low creative students.
7. To compare the achievement of high creative and low creative students.
1.6 **HYPOTHESES**-

Keeping in view the objective of the study the following null hypotheses have been framed for statistical verification.

**HO\textsubscript{1}** - There is no significant difference between the learning style of high creative and low creative students.

**HO\textsubscript{2}** - There is no significant difference between motivational pattern of high creative and low-creative students.

**HO\textsubscript{3}** - There is no significant difference between achievement of high creative and low creative students.

1.7 **KEY CONCEPTS AND TERMS USED**-

The concepts and terms used in this study are learning style, creativity, motivation and academic achievement, which need a relevant and lucid explanation and interpretation.

1.7.1 **Learning Style**-

Learning style, as term has been largely restricted in educational research to narrowly focused aspects of the perceptual modalities. This sensory based preoccupation has had the effect of virtually excluding considerations that focused on other dimensions of learning styles. Learning style may be referred specifically to a person's characteristics pattern of behavior in a particular learning-field. The determination of function level and specific deficits provides the essential information for deciding 'what' a child should
be taught and deciding 'how' to teach him effectively, requires a different data base. According to psychologists, and educationists the term 'learning style' is defined as “the potential individual difference that might be used by the teacher to enhance student’s learning”. The term learning style refers to away or approach, a student follow in his course of learning.

Sigel and coop (1974) have argued learning style as “an integral concept that bridges the personality cognitive dimensions of individuals”. Ausubel (1968): Messick (1976), and De Cecco (1977) also traced learning styles and cognitive styles synonyms which include individual preference in both perceptual organization and concept categorization, that is perceiving, thinking, remembering and solving problems.

Gibson (1976) viewed that learning style and cognitive style are synonyms and defines learning style as “the different ways in which people process information in the course of learning”.

Laycock (1978) describes ‘learning style’ as “an individual’s characteristics way of responding to certain variables in the instructional environment”. However, to state it more briefly a student’s learning style is the way with which he learns best”.

Thus, for the present study, learning style has been defined as “sum total of individual’s preferences for physical, social, emotional and environmental elements in the course of learning”. This explanation is accepted throughout the study.

**Types of Learning Style**

When reviewing the work of researchers on learning, Rosenberg (1978) found that most of them agree on the description of 4 general learning patterns. Impressed with their consistency he labeled the four styles –

(i) The rigid-inhibited style

(ii) The undisciplined style

(iii) The acceptance-anxious style

(iv) The creative style

An important criterion for determine the learning style of an individual is the degree to which he is aware of an open to information needed to solve a problem.

Reisman (1966) differentiated three basic learning styles visual, aural and physical. Shumsky (1968) has pointed out following four learning styles:

(i) Tempo in learning

(ii) Independence in work
(iii) Attentiveness

(iv) Reactions to new situations

Canfield and Lafferty (1970) has given six most common learning styles as follows:

(i) Academic conditions (relations with instruction, and peer)

(ii) Structural conditions (goal setting and competition)

(iii) Achievement conditions (organization and detail)

(iv) Achievement conditions (goal setting and competition)

(v) Mode of preferred learning (listening, reading, iconic and direct experience)

Noor (1972) analysed the process of responding to a learning situation and noted

(i) Individuals differ with respect to what they require to initiate and sustain the learning process

(ii) Children differ in respect task

(iii) Children differ in respect or how much they rely on eyes or ears for learning.

Biehler (1974) has indentified following eight learning styles:

(i) Impulsive

(ii) Reflective
(iii) Short attention span
(iv) Long attention span
(v) Convergent production
(vi) Divergent production
(vii) Resistance to change
(viii) Flexibility

Dressel (1976) found some individuals having strong emotional orientation; while others having strong verbal orientation; some were found strong minded and self-directed; while others preferred interaction with peers; some were found authority oriented; while other were goal oriented.

Laycock (1978) differentiated six learning styles as given below:

(i) Modality preference
(ii) Attention control
(iii) Reflection-Impulsivity
(iv) Levels of processing
(v) Reinforcement
(vi) Grouping preference
The present tool used in this study was prepared by Agarwal (1983) in which he has analyses most suited, relevant and important learning styles from the point of view of teaching learning process, which are as follows.

(i) **Flexibility vs non-flexibility learning style** –

Student who are not satisfied with the traditionally accepted solution to a learning problem and always try to arrive at unique responses and solution who are satisfied with traditional accepted response to a learning situation have been characterized as having non-flexibility learning style.

(ii) **Individualistic vs non-individualistic learning style** -

Student who are self-centered or independent in their learning and enjoy working themselves at best on educational task will be named as having individualistic learning style. Whereas, those, who require help or assistance from peers, adult, teachers etc. and prefer carrying out any educational task with a group or in a term will be characterized ad having non-individualistic learning style.

**Modality Preference (Visual vs Aural) Learning Style** -

Modality preference refers to students’ ability to learn and retain information more efficiently when certain channels of communication are employed. Student who rely upon ‘eyes’ than ‘ear’ for learning i.e. word symbols that are printed or written or on observation and the like, will be classified as having visual learning
style. Similarly other hear human voice directly or indirectly will be named as having aural learning style. The students with visual learning style can also learn from picture. They may need to write down what they want to remember. Writing may not be a necessary property for students having aural learning style.

**Field-dependent vs Field-independent Learning Style**

Generally student's learning is influenced by the structurization of learning situations. This type of learning is called field-dependent, but there are student who grow in their learning at their own, not carrying for the structurization of learning tasks provide to them. This type of learning is called field-independent.

The field-independent-field-independent dimension (Good enough, 1978) reflects the degree to which people function autonomously of the world around them. Student at one extreme of the dimension i.e. field-independent are likely to have internal frame of incoming information. At the opposite extreme, field-independent student are likely to use external frames of reference and are less active in processing information. The perceptions of field-independent children are dominated by the total or overall organization of a field as discrete. The field-independent child is not dominated by embedding context. He can experience the parts of the field as distinct from, rather than fused with, the organized background. Field-independent people tend to use a hypothesis testing approach and field dependent people use an intuitive approach.
Short attention-span vs Long attention-span Learning Style-

These two forms of attention i.e. short and long, do influence the learning of student as they vary in their capacity to concentrate for short and long duration of time in their learning tasks. When a task is given to complete, some student work until it is complete. They can give continuous or long sitting without getting bored or without taking some type of intake in between. Such students have been characterized as having long attention-span, experience difficulty in concentrating for long time during their learning, they lose interest, become irritated and get involved in social activities rather than short attention-spanned students show lack of interest in subject matter. Thus, short attention-span or long attention-span learning styles are related to student’s interest, motivation and urge for learning.

Motivation Centred vs Motivation Non-centred Learning Style-

Motivation is an important factor in acceleration the process of learning. The purpose of motivation is to strengthen or maintain individual’s behavior for achieving educational objective. Students differ in respect of the amount, frequency and kind of motivation for learning they require some have inner drive for learning. Motivation centred students are eager to learn, they should be told exactly what them are required to do, what resources are available to them, how to get help if they need it, and how they will be expected to demonstrate they have learned what they were assigned. Some
teachers, who are aware of this fact, use this knowledge in encouraging their level of aspiration and the like. Students who are motivation non-centred, rarely get success in their life. They do not work hard and blame others for failure and always feel disappointed. Thus, this aspect of learning style is of a great significance as it is directly related with student's success in learning.

**Environmental-orientation vs Environmental-free Learning Style**

There are some individuals who are quite sensitive to physical environmental features i.e. sound levels, conversations, street noise and other distracters and prefer to learn in quite congenial environment. They have been termed as having environmental-oriented learning style. There are students who do not bother for such type of disturbances and can concentrate on their learning tasks being undisturbed are termed as having environmental-free learning style.

For example, music does not affect the concentration for some, while others can concentrate only in pin drop silence. Lighting and heating, either in amount or type, affect the concentration and performance of some students, while others remain unaffected. Students, when exposed to these features are often feel discomfort or difficult to learn or remember the learning tasks. Some of them could bear the resistance of heat, light and sound, while others want to get rid of them. These are the features which affect learning and
ultimately their achievement. This particular learning styles identify the difference for both high creative and low-creative group of students.

1.7.2 Creativity-

Creativity is one the most valued human qualities and is an important area of interest in education to be searched. The concept of creativity has been understood differently by the total personality, although it seems that cognition may be the means of expression of creativity. While the emotional factors might appear to be the impelling forces. In any case, creativity could be understood as the urge or capacity for producing something new in the realm of ideas, concept, things or art creations.

Guilford (1956) called it divergent thinking as opposed to convergent thinking, since in divergent thinking, there was the factor of logical possibility and in convergent thinking, there was the factor of logical necessity. The primary traits involved in divergent thinking and so in creativity were sensitivity to problems, fluency of thinking, flexibility of thinking, originality of response which means new, redefinition and elaboration.

Explorations in creative thinking are essential in the application of knowledge and in the achievement of vocational success in almost every field of human achievement. Creativity is usually the distinguishing characteristic of the truly eminent. The possession of high intelligence, special aptitude and high technical skill is not
enough to produce outstanding achievement. It is tremendously important to society and nation for our creative talents to be identified, developed and utilized. The future of human civilization depends upon the quality of the creative imagination of our next generation.

Stein (1953) remarked that creativity is a novel work which must be accepted by a group at some point in time, while Fliegler (1961) emphasizes more on creativity as a mental process in which man actualizes himself manipulates external and internal symbols as illustrative of ideas, people and object to produce a novel event uncommon to himself and / or his environment that contributes socially useful event to society.

According to Whiting (1961), “Creativity is that mental process in which past experience is combined and recombined frequently with some distortions in such a fashion that one comes up with new patterns, new configurations, new arrangements, that solve some need of mankind”.

Rhodes (1961) from his analysis of the definitions found that they were not mutually exclusive but overlapped and interwinned. He isolated four strands: person, product, process and press. He has remarked that each strand has only academic identity, but in the reality they exist in unity and operate functionally in individuals.

Fliegler (1961) has very emphatically put in the importance of motivation and of past and present experience in the creative
development. He has proposed (i) development preparatory stage, (ii) development of need stage, (iii) selection of the problem, (iv) incubation, (v) illumination, (vi) evaluation, (vii) reformation, and (viii) re-evaluation. His efforts to describe the levels of creativity stand as major contribution in providing an ‘understanding of the creative act’. Here one sees novel attempt in drawing a parallel between the evolutionary development of creativity and the growth of a man.

Simpson (1922) thought of creativity as the initiative which one manifests by his power to break away from the usual sequence of thought. The creativity mind, according to him, was a searching, combining and the synthesis mind.

Bartlett (1958) conceptualizes creativity as adventurous thinking or as getting away from the main track, breaking out of the mould, being open to experience and permitting one thing to need another. Where as Mac Kinnon (1960) studied creativity in architects, writers, mathematicians and many other creative people as pictorial artists, musical composers, romantic creators like writers, philosophers and mechanical inventors as also the creative people in dealing with other material in art, dramatics etc.

Ausubel (1963) described creativity as “a generalized constellation of intellectual abilities are identified as that of fluency, flexibility, originality, elaboration and ability to sense deficiency”
Yamamoto (1965) wrote that creativity was really like an elephant described by different blind men in their own different ways by touching the trunk, the legs or the body of the elephant which meant that there was no way of describing creativity as such individual has its own approach.

Psycho-analysts like Freud thought that creativity was like an emotional purgative. Freud though that art creation largely, was the expression of repressed desires mostly sexual in nature. Repression of such desires lead to neurosis and many novelists, poets, writers, sculptors, painters and other such are creators produced these artistic new things as the expression of their repressed desires.

Creativity to Guilford (1956) as already pointed out, is divergent thinking which is characterized by fluency, newness or originality, flexibility and foresight and in which there are the possibilities of many responses, and the more the responses possible more could be the level of creativity.

**Creative Persons-**

According to Torrance (1962) a creative person is independent, self-confident, courageous, intuitive, optimistic, able to take risk and not credulous to accept and ideas, view or opinion without proper judgment or scrutiny. He may be a person occupied with his own ideas or things and may be quite self-willed and rather difficult person to handle, as compared to the more obedient, studious or a high achiever.
Gopal (1976) made by comparing the creative and non-creative university students brought out that creative person were found to be reserved, emotionally stable, assertive with more ego-strength. They were more self-opinionated, self-caring for others views of criticism. They are generally careless about themselves and their bodily needs, because they are mostly occupied by something, thinking, imagining or creating. Some of them are happy-go-lucky, outgoing, extro-verted but these are also other creative people who are of a retiring nature, or introverted or though minded. They are often sad and thoughtful about the happenings around them with some degree of helplessness in improving the nature of the things.

Generally speaking creativity may be defined in terms of personality product, process or environmental conditions. Torrance (1971) has defined creativity as "the process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies and so forth: identifying the difficulty searching for solution, making guesses or formulating hypotheses about the deficiencies, testing and retesting these hypotheses and finally communicating the result".

Mac kinnon (1965) has suggested that a creative act is one which (i) involves the production of something new and rare, (ii) helps to reach some recognizable goal and (iii) is carried through to completion. Thus, we talk about a creative person, we are generally referring to some-one who generates not only many good ideas but
also many unusual, unexpected or unique ideas that are good with respect to some quality criterion.

Taylor and Williams (1966) emphasize on product aspect. For them “creativity is that human activity which produces a self-generated solution to a new and pressing problem. Creative problem solving must consists of behavior which is new to the learner. A solution must not be derived from a teacher, or a book or model, rather it must be a product of one’s own learning process.

Lawther (1977) writes... “Some of the writing on creativity seems to imply that the more bizarre and unusual the act is, the more likely it is to be called a creative expression, however, odd, eccentric and extraverted acts are not usually highly desirable types of creativity... the degree to which the creativity unit is a copy or imitation of model, or is an action under supervised guidance to attempt to reproduce a pre-established form and pattern of action, it is not considered original or creative”.

Creativity, thus has been defined either in terms of process or product. These two aspects, however, are not mutually exclusive. It is because process always leads to product and product is always a consequence of a process.

Creativity in the present investigation will be considered as a multidimensional attribute. It will be deemed as consisting of fluency,
flexibility and originality and expressed accordingly by subject’s scores or these abilities as measured by the Torrance Tests of creative Thinking (Verbal Form) (1966), the tool for measuring creativity employed in this study. The weighted score of these dimensions of creativity has been considered as composite creativity score.

The above workable concept of creativity has been formulated here in according with the line of action accepted by Getzel and Jackson (1962); Yamamoto (1963) and Torrance (1966).

**Fluency**-

Fluency is represented by the number of relevant and unrepeated ideas which the testee produces. Relevancy is judged on the basis of the appropriateness of the response when considered in relation to the test problem. An unrepeated idea is one which has been expressed only once under a given problem.

**Flexibility**-

Flexibility is represented by a person’s ability to produce ideas which differ in approach or thought trend. All ideas which fall under one category of approach or thought trend are treated as one for purposes of flexibility scoring. Thus, if five ideas are produced and all belong to only one category of approach or thought trend; the scores for flexibility will be one, but if all the five ideas are on five different approaches or thought trends, the flexibility score will be five. There may be intermediate scores for flexibility depending on the number of categories of thought trends to which the responses belong.
**Originality**-

Originality is represented by uncommonness of given response. Responses given by less than 5% of the group are treated as original. It is to be remembered that the responses which are at 5% level are given weight 1, responses at 4% level are weight 2. Likewise responses belonging 3, 2 and 1% are given the weight 3, 4 and 5 respectively. Responses given by 5% or more of the testees will gent on originality weight of zero.

**1.7.3 Motivation**-

Motivation have been defined by different authorities. Chaplin’s Dictionary of psychology (1976) defines motivation as “an intervening variable which is used to account for factor within the organism which arouse, maintain, and channel behavior toward a goal”. This definition has been taken as the functional definition for this investigation.

Cattell and kline (1977) resolved the problem by taking as has basic unit of observation the attitude which he defined in the following paradigm:

“*In these circumstances, I want so much to do this with that*”

Behavioral situation  energy investment  object

With this paradigm cattell (1977) looked at the first problem of motivational measurement through the medium of interest and attitude-strength of interest. Cattell’s of attitudes, who simply
conceive it as static opinions for or against objects, ideas or institutions. Cattell and cattell (1975) takes his view that attitudes can be best understood in the following way, a view endorsed in the more recent work of cattell and child (1975).

In these circumstances (stimulus) I (organism) want (interest need) so much (of a certain intensity) to do this (specific goal; response) with that (relevant object).

Cattell (1957) reported a typical investigation into motivational strength on the basis of which he succeeded in extracting dynamic motivational factors. From his investigation five factors emerged which were tentatively identified and given Greek alphabetical names. Later investigations, as can be seen in the work of cattell and child (1975), have isolated a further two factors of motivational strength and all seven factors have been reliably identified in at least two investigations. The seven factors of motivational strength, primary motivational components, together with their descriptions are not out blow.

I- Alpha-

This factor is characterized by autism-believing that one’s desires are true and practicable (Infantile omnipotence was the Freudian description). It loads on stated preferences, rapid decisions, fluency on cues, means and ends to desired goals and rationalization.
It appears to be component signifying determination to satisfy personal desires at the conscious level even when this is somewhat irrational. Cattell (1957) claims that "clearly it the psycho-analytic concept of the id though we must be definite that we are redefining this as the conscious id".

II- **Beta**

This factor has been identified as a component of realized, integrated interest. The objective tests loading on this factor include high informational content relevant to the interest, perceptual. Skills and capacity to learn in the opposite interest area together with a regard for remote but realistic rewards. Cattel (1957) hypothesizes that the beta factor is one of interest acquired through habits and duty, fully conscious and integrated into the routine of daily life. Thus, he argues that it correspond closely to the Freudian concept of the ego.

III- **Gama**

This factor is harder to relate to psycho-analytic theory or any psychological theory than the other two factors have so far considered. It loads on autism, preservation for a reward, and lack the information about the preferred activity. Cattell and Child (1975) argue that this factor has an "I ought to be interested" quality about it, which leads to highly tentative identification of gama with the super-ego.
IV- **Delta-**

This factor is almost entirely physiological in nature loading on blood pressure, PGR, and speed of decision making. This suggests that the autonomic response to stimuli of interest is measured by this factor.

V- **Epsilon-**

This is a factor which seems to be related to conflict in that it loads on PGR, poorness of memory for given material and poorness of reminiscence. Clinical studies of word association have, since the time of, Jung, indicated that poor memory of responses to such tests and large PGR indicates that the word is of emotional significance to the subjects (initiative of complexes in the psychoanalytic Jargon-sources of conflict below the level of awareness). It appears, therefore, that this epsilon factor could be unconscious conflict factor.

The last two factors **Zeta** and **Eta**, have appeared only in two studies so far, and are less well defined and do not receive even tentative identification in Cattell and Child (1975). All that can be said about them is that Zeta loads on decision strength and impulsiveness (in making decisions). While Eta loads on fluency and persistence in a perceptual task.

These, there are the seven factors of interest strength. The fact that these are seven means that our level of motivation or interest
depends on our position on all these seven factors, particularly the first five which are the largest.

As discussed earlier, wide arrays of attitudes covering many other studies in various fields, namely-social, clinical and educational needed unitary dynamic traits which are recognizable as primary derives or as acquired attitudes pattern. The former are technically termed as ergs. The latter are sentiments the most important of these traits have been chosen for school Motivation Analysis Test (SMAT), which have been this investigation. These dynamic traits are thus major structure which determine the individual’s specific interest but which are not themselves specific interests.

The strength of great variety of specific interests can, however, be economically estimated from these ten major traits: (I) Assertiveness (ii) Mating (III) Fear (IV) Narcism (V) Pugnacity-sadism (VI) Protectiveness (VII) Self-sentiment (VIII) Super-ego (IX) Sentiment to school and (X) Sentiment to Home.

A brief description of these motivation dynamic traits will be presented in chapter 3.

1.7.4 Academic Achievement-

Since independence the government has been trying to revigorate and reconstruct the existing education system in order to improve the level of performance powerful tool in national reconstrcution. But irrespective of the new developments, like the idea of work experience, new vocationalised course, intergrated
curriculum and etc., these problems and the substandard performance of high school students continue to exits leading to depreciation of self worth in students, accompanied by unhappiness and frustration. Why is this so? What is the possible reason behind it? Could this be due to the lack of basic conditions necessary for educational reconstruction? Mere structural changes are not enough. In order to make such changes effective simultaneous programmes are needed to strengthen the urge and commitment for improvement in the concerned individuals (Indian Education Commission, 1964-1966). For this, objectives in the affective domain need to be emphasized.

Recent literature attempting to conceive new education and solve the above problems has emphasized on providing for psychological self-assurance to the student lost in the mass society its worth as conscious concerned, and creative human being. Toffler (1970) stated that education reforms should be such as to enable the student to understand reforms should be such as to enable the student to understand the global consequences of individual behavior, of conceiving priorities and shouldering his share of responsibility. It must take them conscious of their aspirations and strengthens in order to improve the level of achievement.

If the courses are planned and geared according to the needs based on psychological appraisal of students and training provided through specifically designed psychological inputs tapping the tackled insightfully. It may also help in avoiding the atmosphere of despair and uncertainty in the minds of the students. Hence, in the
interest of the students welfare and country's optimum progress, careful identification and proper utilization of students needs and desires becomes the chief concern for academic in the very psychological aspect of the process of academic achievement becomes a necessary pre-requisite to understanding the differences in achievement.

The dictionary meanings of academic achievement are (I) Knowledge attained or skills developed in the school subjected usually designated by test scores or by marks assigned by teachers or both,(II) The achievement of pupils in the so called 'academic' subject as reading arithmetic and history, as contrasted with skills developed in such areas as industrial, arts and physical education (Carter, 1945).

In this research project total marks obtained by a student in all subject has been considered as the academic achievement.

1.8 **DELIMITATIONS OF THE STUDY**

On the basis of the procedure followed the study has been delimited as follows:

1. Only seven learning styles as measured by Learning Style Inventory (Agarwal, 1983) have been studied in this study.

2. Girls institutions have not been taken in this study.

3. Study has been conducted on IXth Class Student only.

4. The present study is restricted to the high creative and low creative group of students. Average students on the test of creativity have not been considered in the study.
5. Only ten motivational dynamic source traits measured by SMAT (Sweney, Cattell and Krug, 1970) Hindi adaptation (Girl and Srivastava, 1987) have been studied in the present study.

6. The sample was delimited to class IX students from the urban schools of Allahabad City.

7. Hindi version of Torrance Test of Creative Thinking (Jayaswal, 1977) has been used.

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