"A STUDY OF ACADEMIC ACHIEVEMENT IN RELATION TO LEARNING STYLE AND ACHIEVEMENT MOTIVATION OF SENIOR SECONDARY SCHOOL STUDENTS"

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by

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Certificate of the Supervisor

This is to certify that the thesis entitled "A STUDY OF ACADEMIC ACHIEVEMENT IN RELATION TO LEARNING STYLE AND ACHIEVEMENT MOTIVATION OF SENIOR SECONDARY SCHOOL STUDENTS" Submitted by Ms Roopali Chandra for the award of Degree of Doctor of philosophy by Babu Banarasi Das University, Lucknow is a record of authentic work carried out by her under my supervision. To the best of my knowledge, the matter embodied in this thesis is the original work of the candidate and has not submitted elsewhere for the award of any other degree or Diploma.

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Declaration by the Candidate

I hereby declare that the work presented in this thesis entitled "A STUDY OF ACADEMIC ACHIEVEMENT IN RELATION TO LEARNING STYLE AND ACHIEVEMENT MOTIVATION OF SENIOR SECONDARY SCHOOL STUDENTS" in fulfilment of the requirements for the award of degree of Doctor of Philosophy of Babu Banarasi Das University, Lucknow is an authentic record of my own research work carried out under the supervision of Prof (Dr) Shivani Bhatnagar. I also declare that the work embodied in the present thesis is my original work and has not been submitted by me for any other Degree or Diploma of any university or institution.

Date Name & Signature of Candidate

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Date:

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PREFACE

Education has a very important place in the intellectual and social development of a child. It is through education that the all-round development of personality is possible. It is also to be kept in mind that education is a lifelong process and it starts at the time of birth and ends only with death. With the help of education man achieves success in life and makes progress in society. In a competitive society the desire to achieve a higher level than peers may lead to a stronger desire or motive to achieve something or to beat others in the race. This type of motivation produced by such desire or motive is called the achievement motivation. It becomes necessary to measure and evaluate the continuously progressing abilities of the children to motivate further on the path of progress.

Education is the only way to win the world. It is to think deeply about something till its roots and understand the intention behind it. Academic achievement is a term for performance outcomes that describe how well a person performed in activities in a learning environment, particularly in school, colleges and university. It is commonly believed that styles of learning are concerned with how the learners prefer to learn instead of what they learn and it is also an important factor for students' academic achievement. Academic achievement is an essential tool for personal growth that helps in a child's overall development and helps them reach their goals. That accomplishment of a parent's dream is facilitated by the capability of their kids to mount the success ladder.

Students have diverse learning styles because of their talents and preferences in how they absorb and process knowledge. While some people like to work with concrete data, others feel more at ease with abstractions.

Lot of studies have been conducted in the area of students' academic achievement and learning performance is affected by numerous factors including gender, age, teaching faculty student schooling, social-economic status, medium of instructions in schools, tuition trend, daily study hour, learning style, mental health and accommodation as hostelries in schools or day scholar.

Achievement motivation is a pattern of planning of actions and of feelings connected with striving to achieve some internalized standard of excellence. The most significant aspect that can have an impact on a person's academic performance is motivation. Early academic success raises subsequent academic success. Achievement in academic field of a student refers to the skills and competencies developed in school subjects that were evaluated by school authorities with the help of achievement tests that may be either standardized or teacher made. In other words, academic achievement may be defined as competence that is really revealed in school subjects in which they have received the instruction.

Present thesis has been presented in five chapters which are as follows:

In the first chapter the main terms academic achievement, achievement motivation and learning styles has been discussed in detail. This chapter also included the framework of the thesis such as objectives, hypothesis, delimitation, tools and statistical techniques.

In the Chapter 2, there has been extensive literature review done that has been included here. This chapter also includes reviews related to academic achievement and relationship of academic achievement with learning styles. It also includes relationship between academic achievement and achievement motivation.

Third chapter is basically related with research methodology. It included description of tools (achievement motivation and learning style). It also includes the methodology used in present research work.

Fourth chapter is basically related with Data interpretation and results of data collected through random sampling. It included tables related to academic achievement in relation to learning style achievement motivation of senior secondary students in Lucknow city.

Fifth Chapter included finding of the present study, suggestions for further researches and conclusion.

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CHAPTER I
INTRODUCTION

1.INTRODUCTION

Education has a very important place in the intellectual and social development of a child. It is through education that the all-round development of personality is possible. It is also to be kept in mind that education is a lifelong process and it starts at the time of birth and ends only with death. With the help of education man achieves success in life and makes progress in society. In a competitive society the desire to achieve a higher level than peers may lead to a stronger desire or motive to achieve something or to beat others in the race. This type of motivation produced by such desire or motive is called the achievement motivation. It becomes necessary to measure and evaluate the continuously progressing abilities of the children to motivate further on the path of progress.

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CONCEPT OF ACADEMIC ACHIEVEMENT

In popular culture, teacher expectations are perceived to play a strong role in academic achievement. In 1968, Robert Rosenthal and Lenore Jacobson did a seminal study that established the notion of self-fulfilling prophecy. In other words, the teacher produces a level of academic achievement because of the teacher's expectations of the student's ability. In the study, researchers told teachers certain students in grades one through six in a San Francisco elementary school had a higher potential learning than other students. The results of the study showed the students designated with high potential had higher academic achievement than other students did in the study. In actuality, the high potential students were picked randomly and did not have higher potential. The study reported increased student achievement for those students where the teachers had higher expectations, a self-fulfilling prophecy. Teachers,

scholars and the popular media ran with this information and set the groundwork for our present-day expectation that teacher attitude has a significant impact on student achievement.

The degree or level of success accomplished in a particular task is referred to as achievement. Achievement is viewed basically as the competence a person has in an area of content. This competence is the result of many intellectual and non-intellectual variables.

Degree of proficiency or progress made by pupils in the mastery of school subjects as per Stagner

Achievement can be measured by how much information or skill a student has acquired from the teaching provided to him. It is the extent through which a student gains knowledge in a specific subject through instruction per Crow and Crow

Achievement can be considered as such task-oriented behaviour that enables the individual performance to be assessed in accordance with certain prescribed criteria, both internally and externally as per Clifford

Achievement is concerned to a great extent with the development of knowledge, understanding and acquisition of skill as per Rao

Achieving success means demonstrating mastery or performance in a particular domain of knowledge or competence as per Dictionary of Education, C.V. Good, 1959

Successfully completing a task or performance in a subject is, of course, generally a result of talent, dedication, and interest. Achievement can be categorized in the form of various grades, marks, scores, or constructive criticism as per Encyclopaedia of education

Analysing the definitions mentioned above, we can conclude that academic achievement refers to the level of proficiency attained in academic work or as formally acquired knowledge in school subjects in the examination. It reveals the level of educational accomplishments in various subjects taught in educational institutions. Additionally, it shows how much and how well one has learned a subject after receiving instruction.

Achievement brings 3C into life:

- **Courage to stand**
- **Career to adventure**
- **Capacity to serve**

Outcome of education is achieving of educational goals by a student or teacher. Educational achievement is having a degree or other credential such as secondary school mark sheets, certificates, diplomas and bachelor's degrees.

Success of the students in the field of education can generally measure through examinations (oral, written or practical) or continuous and comprehensive assessments but there is no universal agreement on how it is should be judged or which aspects are most important— Interpretive knowledge, it is the type of knowledge in which it clarifies how a particular thing can be accomplished or descriptive knowledge, is the type of knowledge which tells the basic knowledge about something. It is an important instrument of personal progress, which helps a student to achieve his goal. It also helps in the fulfilment of a parent's aspiration that their children will succeed and move up the career ladder. In our nation, a student's academic success is determined by how well they score in the school exams; they are classified as brilliant, mediocre, fast or slow learners, or whether they are competent to go to the next level. The success of the child depends upon his or her concept-based education and understanding

level in class. Additional variables include personal interests, abilities, motivation, teaching strategies used in the classroom, learning styles and social context.

Academic success is the result of a student's skill and the work they put forth to achieve their learning goals. The need for success is a learned motivation to finish tasks and work toward accomplishment. Achievement provides the motivation to compete and endeavour for success.

Importance of Academic Achievement

Academic achievement is an important tool to measure of personal progress of the student, which helps to achieve the goal and make holistic development of a child. Academic Achievement is the combination of ability and effort. It is marks obtained by students in an academic area. It is the centre around which the whole education system evolves. The success of any institution, school and college is measured by the academic performance of the students.

Senior secondary education is the stage in which we include classes XI and XII.

This stage is very important for the student because it is the path to their professional life. Academic achievement provides the track record of a student's progress by providing information of his/her effectiveness and potentiality. In the current scenario teachers or facilitators use of a different types of evaluation techniques such as oral, objective, essay examination and certain standardized tests etc. to assess the multiple dimensions of a student's achievement.

Factors affecting Academic Achievement

There are many factors which affect academic achievement that are intelligence, personality, motivation, school environment, heredity, home environment, learning, experiences at school, interests, aptitudes, family background, socio-economic status of the parents etc.

SINHA, 1970 – Hard work, intelligence, memory, good health, availability of books, methods of study, financial security and interest in social and practical work.

Siegfried & Fels, 1979 – Effort and previous schooling.

Devadoss & Foltz, 1996 –Parents education and family income

Aripin, Mahmood, Rohaizad, Yeop, & Anuar, 2003 - Self motivation, age of student, learning preferences.

Hence it could be concluded that the gender, geographical area in which the student lives and types of teaching methods are exposed may influence academic success of the students at all levels of education gender, socio-economic status, parental education, types of teaching methods, learning styles, achievement motivation have direct influence on the academic achievement.

CONCEPT OF LEARNING

Development of the individual is the result of learning because every part and action of one's life is connected with learning; hence, efficiency, individuality and personality are based on learning. Our entire existence depends upon learning. An individual starts learning immediately after his birth. While playing with a burning matchstick, a child burns himself and withdraws. Next time when he sees a burning matchstick, he takes no time in withdrawing himself from it. He learns to avoid not only the burning matchstick but all burning things.

The term learning covers every modification in behaviour to meet environment requirements as per Gardener Murphy

Learning is the acquisition of habits, knowledge and attitude. It involves new ways of doing things and it operates in an individual's attempts to overcome obstacles or to adjust to new situations. It represents progressive changes in behaviour. It enables him to satisfy interests to attain goals as per Crow and Crow

An overview of these definitions may clearly reveal that learning may be termed as a process or its outcome in which necessary changes in the behaviour of the learner are brought through experiences-direct or indirect.

CHARACTERISTICS OF LEARNING

- Learning is the change in behaviour
- Change in behaviour is relatively enduring or permanent
- Learning is a continuous lifelong process
- Learning is a universal process
- Learning is purposive and goal directed
- Learning involves reconstruction of experiences
- Learning is transferable from one situation to another
- Learning helps in proper growth and development
- Learning helps in the attainment of teaching learning objectives
- Learning helps in the balanced development of personality
- Learning helps in proper adjustment
- Learning helps in realization of goals

Learning Styles: Meaning and Concept

The term learning styles in its word meaning stands for the styles adopted by the learners for their learning. The learning style adopted by a learner in perceiving, interacting with and responding to the learning environment is found to differ from learner depending upon their own individualities. Learning styles speaks to the understanding that every student learns differently. An individual's preferred method of absorbing and retaining knowledge is referred as their learning style. According to Howard Gardner's theory of multiple intelligence,

everybody has different types of learning styles. Styles are neither right nor wrong. No one style is better than another- it just may be that one style is more conducive for learning a particular type of material or in a particular type of school.

Learning has a vital role in human life. It is a lifelong process. It is very important in shaping the behaviour of an individual.

The term styles of learning refer to the view that different people learn in different ways. Learning styles indicate individual differences in learning.

An individual's learning style is the way he/she concentrates on, processes, and remembers new and difficult academic information or skills. The role of learning styles in the thinking or learning process is a key component in effective teaching.

Students' learning styles have been shown to be affected by their educational experiences, particularly at senior secondary level. Therefore, knowledge of learning style is useful in designing classroom activities. Different authors have defined the learning style differently.

DEFINITIONS OF LEARNING STYLE

As a term, learning style has been defined and explained by various thinkers in their own ways. The views expressed by a few in this concern-

Learners learn most systematically and most successfully identify, process, store and recall what they are attempting to learn under Styles of Learning and its' conditions. **James and Gardner, 1995**

Learning style is a general concept which highlights the learning differences like the quality of an umbrella. Every individual has a different style. This can be in clothes' form, the music

listened to and the colours selected by and the friends and social groups of the individuals. Those different individual styles help the individual to identify a learning style. **Butler, 1988**

Learning style as an integral concept that bridges the personality and cognitive dimension of the individuals as per **Sigel and Coop, 1974**

Learning style and cognitive style are synonymous as per **Gibson, 1976**

Learning style refers of the style of information processing, storage and retrieval of information as per **Letteri, 1980**

Learning style is considered as people absorb, process and retain information as per **De Bellow, 1990**

Learning styles as how an individual prefers learning as per **Sternberg and Zhang, 2001**

1.2.4 Various approaches on models of classifying Learning styles

Learning styles known as various approaches or ways of learning have been typically classified into various ways. For such classification, a number of researchers and scholars have come up with certain models reflecting their own views about the learning styles possessed by the individual learners. A few such models describing the classification of learning styles may be discussed as below:

David Kolb's Model:

An American Professor A. Kolb came up with his idea of experiential learning and learning styles as early as in the 1970s. The detailed description in this regard has been given in his book Experiential Learning: Experience as the Source of Learning and Development(1984), Conceptualizing his model, David Kolb says that as the result of heredity, upbringing and current environmental demands, different individuals have the tendency (i) to grasp (perceive)

their experiences in two different ways named as concrete experience and abstract conceptualization and (ii) to transform (process) these experiences into two different ways named as reflective observation and active experimentation. The combination of the two modes of grasping the experience with two modes of transforming the experience according to Kolb then may create four different learning styles as depicted through the two-by-two matrix

Grasping/ transforming experience	Reflective observation(watching)	Active experimentation(doing)
Concrete experience(feeling)	(i) Diverging style (feeling and watching)	(iii) Accommodating style (feeling and doing)
Abstract conceptualisation(thinking)	(ii) Assimilating style (thinking and watching)	(iv) Converging style (thinking and doing)

Learning Style	Learning Characteristics	Learner's characteristics
Diverging learning style	Concrete experience + reflective observation (feeling and watching)	• Strong in imaginative ability and emotional • Good at generating ideas and seeing concrete situations and things from different perspectives • Interested in people • Broad cultural interests
Assimilating learning style	Abstract conceptualisation + reflective observation (thinking and watching)	• Strong ability to create logically sound theories than approaches based on practical value • Excels i n inductive reasoning • Concerned with abstract concepts and ideas rather than people
Accommodating learning style	Concrete experience + active experimentation (feeling and doing)	• Greatest strength is doing things • More of a risk taker and accepting challenges • Performs well when required to react to immediate circumstances • Prefer to work in teams to complete task • Solves problem intuitively
Converging learning style	Abstract conceptualisation + active experimentation (thinking and doing)	Strong in practical application of ideas Can focus on hypo-deductive reasoning on specific problems Unemotional Has narrow interests

Honey and Mumford's Model

Peter Honey and Alan Mumford's model of learning styles is the adaptation of David Kolb's model. They published their version of the model in the Manual of Learning Styles, 1982. According to their model, the learners, in general, may be found to have preference for one of the following four learning styles.

1. Activist learning style
2. Reflector learning style.
3. Theorist learning style
4. Pragmatist learning style

The learning style proposed by Honey and Mumford	Characteristics of the learners	The corresponding learning Style proposed by Kolb
Activist style	Here and presently gregarious, look for challenge and immediate experience, broad minded, bored with implementation	Accommodating style
Reflector style	Stand back, gather data, consider and analyse, delay coming to conclusions, listen before speaking, thoughtful	Diverging style
Theorist style	Think through things in consistent steps, absorb disparate realities with coherent theories, rationally objective, and dismiss subjectivity and flippancy.	Assimilating style
Pragmatist style	Look for and try-out modern thoughts, down to earth, appreciate problem solving and decision-making, rapidly bored with long dialogs	Converging style

Anthony Gregory's Model

Anthony F. Gregory and Kathleen A. Butter have provided a model of learning styles known as Anthony Gregory's model. This has been described by Dennis W. Mills, 2002 in his article entitled applying what we know: Student learning styles. This model conceptualizes that:

One's learning style is influenced by the way one perceives and organizes the information belonging to his environment.

There are two methods or ways of one's perception

(i) Concrete

(ii) Abstract and two organizational or ordering abilities named as (i) random and (ii) sequential.

Information through five senses can be involved in concrete perception, while unique discernment includes the understanding of thoughts, qualities and concepts which cannot be experienced through senses.

Regarding the capacity for ordering, sequential ordering includes the logical, linear structuring of information, while random ordering includes the grouping of information in randomized fragments.

Each person possesses both perceptual characteristics and both ordering abilities, however some traits and ordering abilities tend to predominate more with particular people.

The combination of perceptual qualities and ordering abilities may give rise to one or the other learning styles as depicted in the matrix given below:

Perception of information organization of information	Concrete	Abstract
Random	Concrete random style	Abstract random style
Sequential	Concrete sequential style	Abstract sequential style

Gardner's Multiple Learning Style Model

Howard Gardner, while propagating his theory of multiple intelligences and identifying seven distinct intelligences, forwarded the idea of multiple learning style models. According to Gardner, his theory of multiple intelligence, students are found to differ in terms of their cognitive abilities and intelligence and therefore they learn, remember, perform and understand in different ways. Students learn in ways that are identifiable and distinctive and their learning styles are very much guided by the type of cognitive abilities or intelligence possessed by them.

Accordingly, Gardner's multiple learning style model is known to classify the learning styles of the learners in seven distinct styles as mentioned below:

- Visual/Spatial Style (related to the ability perceive the visual)
- Verbal/Linguistic style (related with the ability to use words and language)
- Logical/Mathematical style (related with the ability to use reason, logic and numbers)
- Bodily/Kinaesthetic style (related with the ability to control body movements and handle objects and like to make and touch things skilfully)
- Musical/Rhythmic style (related with the ability to produce and appreciate music)
- Interpersonal style (related with the ability to relate and understand others)
- Intrapersonal style (related with the ability to self-reflect and be aware of one's inner state of being)

Sprenger's Model

Marilee Sprenger in 2003 has come out with her model of learning styles in her book Differentiation through Learning Styles and Memory. In her model she details various ways in which teachers can teach so that students will remember. She categorizes those teaching methods according to the learning styles of the learners categorized as visual, auditory or tactile/kinaesthetic with the explanation as outlined below:

Methods for visual learners include ensuring that students can see written words, using pictures when describing things, drawing timelines for events in history, writing assignments on the board, using overhead transparencies/ handouts and writing instructions.

Methods for auditory learners include repeating difficult words and concepts aloud, incorporating small-group discussion, organizing debates, listening to books on tape, writing oral reports and encouraging oral interpretation.

Methods for tactile/kinaesthetic learners include providing hands- on activities (experiments etc.), assigning projects, having frequent breaks to allow movement, using usual aids and objects in the lesson, using role play and field trips.

Fleming's VAK/VARK Model

Fleming's VAK/VARK Model is one of the quite popular models used for the classification of learning styles now days. This model was given by Neil Flemming. In its formal version it was introduced in the form of VAK Model. VAK is an acronym that stands for Visual, Aural and Kinaesthetic. According to this model the learning styles of the individual learners may be generally classified into three categories namely Visual learning style, Audio learning style and kinaesthetic learning style. In this model Fleming, 2001 has claimed that:

The learners preferring visual learning style exercise their preference for seeing (think in pictures; visual aids such as overhead slides, diagrams, handouts, etc.)

The learner preferring audio learning style prefers learning through listening (lectures, discussions, tapes, etc.)

The learner who prefers kinaesthetic learning style learn through experience of moving objects, touching and doing activities (active exploration of the world; science projects, experiments, etc.)

In its later version the Flemings Models of Learning Styles has been converted to the VARK Model signifying that learning style can be classified as visual, auditory, read/write and kinaesthetic. In this model the abbreviation of VARK has been explained as below:

V-Visual style (Learning through images)

A-Auditory style (Learning by listening)

R-Read/Write style (Learning from text)

K-Kinaesthetic style (Learning by doing and physical movements)

CHARACTERISTICS OF LEARNING STYLES

- **Learning styles are learned or innate**

Most of the learning styles are learned as young children from mother, father, grand-parents and close family friends with whom they interact regularly or the learning style which is present naturally or which we are born with.

- **Learning styles can change**

In fact, this often happens in the first few years of school if the learning styles encouraged by the teacher are different from the learning styles encouraged by the parents.

- **Learning styles are usually learned unconsciously**

Children do not realize that they are learning styles. Older students and adults may be consciously aware of their learning styles and of the fact that they are making decisions on which learning styles to use. But even with adults, the learning styles and decision making related to learning styles are still largely unconscious.

TYPES OF LEARNING STYLES

According to Howard Gardner's theory of multiple intelligence, everybody has different types of learning styles to help them process information or learn new things. These learning styles are given below:

- **Visual (Spatial)**

Visual or spatial learning is a learning style that requires visual aids, images, diagrams or graphs to help retain information. These types of learners often choose technology-driven careers, as well as industries related to art, photography, architecture and design.

- **Linguistic (Verbal)**

Linguistic or verbal learning is the need to learn information through reading, writing, listening and speaking. These learners often have excellent memory and many become teachers and professors.

- **Logical (Mathematical)**

Many people with this learning style can easily recognize patterns and understand relationships between numbers. These learners often become engineers, mathematicians and scientists and are very good at playing games like chess.

- **Aural (Auditory/ Musical)**

In this learner learn through listening. They also use their listening and repeating skills to sort through the information that is sent to them.

- **Interpersonal (Social)**

These types of learners learn by relating to others. Often these people share stories, work best in teams, and compare their ideas to the ideas of others. They are often naturally good leaders as well as team players.

- **Intrapersonal (Solitary)**

These learners are someone who works and learns best when they are alone. They are motivated by internal forces, rather than external forces. These people often enter creative fields, become entrepreneurs and sometimes small business owners.

- **Kinaesthetic (Physical /Tactile)**

It is a learning style in which learning takes place by the students carrying out physical activities, rather than listening. Dunn and Dunn define kinaesthetic learners as students who require whole-body movement to process new and difficult information.

- **Naturalistic**

These types of learners learn by working with and experiencing nature.

Following aspects of learning styles of learning styles have been taken into consideration in the present study

K.S. MISHRA, 2012 refers to the conditions of education which enable students to learn. Hehas discussed the below mentioned styles of learning and also made an inventory which aims to measure these styles.

- **FIGURAL LEARNING**

Figural styles of learning contemplate to the student's liking towards visual experience related to making figures, mind maps, diagrams, charts, pictures, maps and photographs, imitation and practice, conceptualizing one's experiences and reproducing the information.

- **VERBAL LEARNING**

In verbal style learners are at ease with verbal information. Learners acquire knowledgeabout objects, events and their features largely in the terms of written or vocal representations of information in the form of words, ideas, expressions, etc. Verbal learners learn most precisely and effectively, when material is presented to them audibly. Storage of information becomes easier due to continuous spoken repetition.

- **ENACTIVE LEARNING**

Learners perceive information through all the sensory organs of our body. The learner interacts with the environment on the basis of the knowledge gained through physical actions, senses, stimuluses and motor skills. It expresses one's desire for action based concrete experiences.

- **REPRODUCING LEARNING**

Reproducing styles of learning is focussed with the student's choice for impersonation, imitation and practice, memorizing the content and producing the information again byreading out loud or writing or murmuring with oneself or by listening to others; seeing

many figures pertaining to the information, constructing the figure in mind for reproducing pre acquired knowledge.

- **CONSTRUCTIVE LEARNING**

It is concerned with the student's choice for pointing out differences, pertaining to and examining the information; reorganizing information and adding new ideas to it, creating pictures, models and diagrams related to any activity and pointing out differences and similarities between figures; underlining self-efforts in carrying out activities; comparing and relating new experiences to old one's for shaping the already stored information.

Learning style and academic achievement

Every child follows its unique way to learn and process information. Some of the students prefer to learn visually, while other students are comfortable with auditory or kinaesthetic styles of learning. Because of these different styles of learning, it is important for teachers to include activities related to each of these learning styles in their curriculum so that all students are able to succeed in their classes. A student's academic achievement can be increased by accommodating their style of learning. Adapting academic materials according to these learning styles will facilitate students learning especially for low and moderate achieving students. Students who understandtheir own style are likely to be better learners, achieve higher grades, have more positiveattitudes about their studies, feel greater self-confidence and exhibit more skill in applying their knowledge in courses.

CONCEPT OF MOTIVATION

Motivation is the central factor in the effective management of the process of learning, some type of motivation must be present in all learning as per KELLY

Motivation means the forces which impel and activate the organism to action. It is the basic activity for creating interest. Various means such as reward or praise are positive forms of motivation, whereas blame or punishment comes under negative motivation. Motivation is the most effective form in learning that may activate speedup and sustain learning.

Etymologically the word Motivation has arrived from the Latin word **movere** which means to move. It involves the process of arousing movement in an organism. Motivation has a very long history as a determinant of human behaviour. Want, desire, need, goal, aspiration, drive, wish, aim, ambition, hunger, thirst, love and revenge etc. are the few words which refer to motive.

For example, a girl wants to be a doctor, a youth for political readers, a patient wants relief, a hungry person thinks about food only, these are the few motives which play animportant role in human behaviour.

Just in the steam engine there has to be fire and water to produce steam as an impelling force, so also in the individual, there are certain fundamental or our basic drives which determine the process of learning as per Mc Dougal

DEFINITION

Motivation is to find those approaches that will make the child eager for the kind of learning the school endorses as per Benard H.W.

Motives are physiological and psychological conditions within the organism that motivate it to act in certain ways as per Mc Dougall

After analysing the above definitions, we can conclude that-

- Motivation is not the main but the complementary part of learning.
- It provides the way to the end or goal.
- It leads to the manifestation of activity.
- It is affected by physical and mental as well as internal and external conditions.

MOTIVATION RELATED TERMS

- **MENTAL SET**

This is related to the mental fitness of a human being, if a person is no mentally fit, he will not bemotivated towards any activity.

- **DRIVES**

A drive is related to the psychological condition of a creature which encourages him for a specific behaviour. For example, if a student puts effort to obtain first division in some examination. This effort is made because of some motive or drive.

- **INCENTIVES**

For example, the need for water gives rise to thirst and the need for food gives rise to hunger.

Thus, we can say that it is an external condition assumed as capable of satisfying an arousedmotive.

- **INTEREST**

It is a tendency in which an individual puts attention on only those things or activities in whichhe is interested.

- **GOAL**

The result or outcome of the work done by the individual is called a goal and he work for it.

- **NEEDS**

Needs are the general wants or desires.

- **CURIOSITY**

It is a tendency to investigate and seek more about new objectives.

KINDS OF MOTIVATION

The motivation can be broadly classified into two kinds:

- **NATURAL MOTIVATION OR INTRINSIC MOTIVATION**

This type of motivation is directly linked with natural instincts. The individual, who is intrinsically or naturally motivated, performs an act because finds his interest within the activity.

- **UNNATURAL OR EXTRINSIC MOTIVATION**

The individual does or learns something not for its own sake, but as a means of obtainingdesired goals or getting some external reward. Working for a better grade or honour, learning

a skill to earn a livelihood, receiving praise and blame, rewards and punishment etc. all belongto this category.

CHARACTERISTICS OF MOTIVATED BEHAVIOUR

The teacher wants to know how he/she can discover whether his students have become willing to learn something towards which he has motivated them. This fact can be discovered throughthe following characteristics:

- **Eagerness**
- **Energy mobilization**
- **Consistency**
- **Achievement of goal and reduction of tension**
- **Concentration**
- **Knowledge of progress**
- **Fear of failure**
- **Level of aspiration**
- **School environment**
- **Seminars and conferences**
- **Competition**

MOTIVATION AND EDUCATION

The importance of motivation in education can be seen in following manner:

- **Development of beliefs and confidence**
- **Growth of interest and aptitude**
- **Guidance**

- **Basis of learning**
- **Will to learn**
- **Fulfilment of needs**
- **Praise and criticism**

THEORIES OF MOTIVATION

- **STIMULUS-RESPONSE THEORY**

This theory is given by Behavioural Psychologists. This is only a modified form of their theory of learning. According to this view, the entire range of human behaviour can be explained as aresponse to physical stimulation.

- **THE PHYSIOLOGICAL THEORY**

This theory is also known as Central Motive State and developed by Morgan. According to this theory, many changes continuously occur within the body. And, for various reasons, reactionsalso continue to take place inside the body.

- **SELF ACTUALIZATION THEORY**

This theory was developed by Abraham Maslow. Maslow's theory is based on hierarchy of needs. Motivation is based on physiological needs, safety needs, belongingness and love need,the esteem needs and self-actualization needs.

- **NEED THEORY**

This theory has been developed by Murray and is based on needs. There are two types of needs:the first one is primary needs and second one is secondary needs. Primary needs are essential for survival and secondary needs are the outcome of primary needs. Some examples of secondary needs are:

Acquisition, achievement, construction, order, dominance, rejection, play, autonomy etc.

- **THEORY OF INSTINCT**

The propounder of the Instinct theory was William Mc Dougall. According to Dougall, instincts are innate tendencies. The instincts cause the occurrence of behaviour. Mc Dougall proposed that every instinct is followed by specific behaviour. Most human behaviours are determined by sentiments, and all behaviours are purposive.

- **THE HYGIENE THEORY OF MOTIVATION**

This theory was given by Fredrick Herz-berg in 1996. It has presented for industry and trade but it has been influenced by the teaching learning activities. The teacher can use the hygiene factors in his teaching. This theory is helpful in organizing teaching activities and creates appropriate situations for motivating the students' activities.

- **KURT LEWIN THEORY OF MOTIVATION**

This theory is given by Kurt Lewin in which he has taken many terms from physics like vectors, valences etc. Majorly he has used the term psychological person, psychological environment and foreign hull. He has emphasized that the individual learns best in his psychological environment.

- **THEORY OF ACHIEVEMENT MOTIVATION**

This theory of motivation was developed by social psychologists, Mc Clelland, John Atkinsonand their associates. The psychologists thought that an individual

Psychology is greatly affected by social, political and economic problems. Mc Clelland holdsthe view that psychology of an individual and the nation contribute to understanding these problems. Sociological and psychological factors are major variables affecting economic

growth. He believes that changes in the beliefs and attitude of persons boosted economicgrowth in certain countries.

McClelland holds this view that human beings differ from one another with regard to thestrength of achievement motive.

DEVELOPMENT OF ACHIEVEMENT MOTIVE

A number of variables in home or family school and society affect the achievement motive.

Parental guidance and expectation develop the need for high achievement in life amongchildren. The attitudes and motives are developed by the home environment.

The social philosophy and norms of society are the significant variables in developing achievement motives.

ACHIEVEMENT MOTIVATION

Motivation makes the achievement of the task easy. If we ask some questions, what makes us learn? Generally, we see in the classroom that some students are very much interested in the teaching learning process and some students are very much lazy. Think about what the reason behind this behaviour of students is. Here, it is a proverb to keep in mind that, "You can take the horse to water but cannot force him to drink water."

Thus, we can say that the motivation explains why an animal or human being behaves in a particular manner. What is exactly responsible for the motivation of an individual? Achievement of goals by students depends upon a combination of factors.

ROLE OF TEACHER IN ACHIEVEMENT MOTIVATION

- The teacher should make a clear understanding of achievement motives in life by telling the stories of great persons and their achievement.
- They should provide a proper environment in the classroom and in school. The conductive environment develops achievement motives among students.
- They should make clear to the students those new motives will improve their self-image.
- They should make an effort to create a conducive social climate in the classroom so that every student should feel elevated and he belongs to a high group of students.
- Ask the students to keep the record of their progress towards their goal. The teacher should emphasize on self-study of students.
- Make students committed to achieving concrete goals in life related to the newly developed motive.

NEED OF THE STUDY

Due to the Information and Communication Technology Revolution, there has been a rapid and phenomenal increase in the interaction between communities, politics and societies in today's world. Our Indian social system is also going through massive change to meet the needsof the modern world. Society has different subsystems and Education is one of them. It is evident that with the changing time, Education has transformed itself to meet the demands of society. Under the influence of social needs, priorities in the realm of education have witnessedmajor shifts from time to time. As we know, the word education comes from the word 'educere'which means to bring about what is already in. The purpose of school education is to guide the children to discover themselves by identifying and nurturing their potential to a full extent. Teacher is a person who builds the future of a student by planting the seeds of knowledge.

Nowadays, schools put students under a lot of pressure. School children always carry a huge bag of books along with them. Whether it is class 1 or class 12 there is a huge burden of notebooks. Every parent expects to see their children in the first position. Children also compete in this competitive environment and try to score higher and higher. It should increase the spirit among the children, but it is creating side effects in a different way by imposing a lotof pressure on them. Adolescence is a decisive age and a difficult period in a young person's life. They face many challenges in this period like physical, developmental, psychological need, attitudes, parental behaviour, career, conflict, frustration, anxiety and stress. When adolescents are physically and mentally fit, they perform better in their academic achievement.

Achievement motivation moves or drives an individual to strive to gain mastery of difficult and challenging situations or performances in the pursuit of excellence. It comes into the picture when an individual knows that his performance will be evaluated, that the consequenceof his actions will lead either to success or failure and that good performance will produce a feeling of pride in accomplishment. Research shows us that each learning style uses different parts of the brain. By involving more of the brain during learning, we remember more of what we learn. Researchers using brain-imaging technologies have been able to find out the key areas of the brain responsible for each learning style. An individual style of learning basically depends upon cognitive, emotional and environmental factors, as well as individual previous experiences. In other words: every individual is different. It is necessary for facilitators to understand the differences in their students' style of learning, so that they can implement best practice strategies into their daily activities, curriculum and assessments. So we can say that inthe present era it is very important for each educator to know the learning style of an individualand how it affects academic achievement.

STATEMENT OF THE PROBLEM

A STUDY OF ACADEMIC ACHIEVEMENT WITH RELATION TO LEARNING STYLE AND ACHIEVEMENT MOTIVATION OF SENIOR SECONDARY SCHOOLSTUDENTS

OPERATIONAL DEFINITIONS OF THE TERMS TO BE USED

Academic Achievement

Academic achievement of students who are studying in class Xth affiliated to U.P. Board wasconsidered as academic achievement.

Achievement Motivation

Achievement motivation typically refers to the level of one's motivation to engage in achievement behaviours, based on the interaction of such parameters as essential for achievement, hope for success and the incentive value of success. In this study achievement motivation of class XI students were quoted here in the terms of academic factors, factors of general field and social interest.

Learning Style

Styles of learning are different methods or learning strategies that include a variety of techniques considered to be most productive for the learner as an individual.

Learning style was quoted here in terms of a combination of three categories: Enactive style oflearning, Figural style of learning and Verbal style of learning.

Senior Secondary School Students

Students in this study were defined as the students who are studying in class XI in government,aided and private senior secondary schools affiliated from U.P. Board in

Lucknow city.

Government Senior Secondary School

The government has to carry out the administration and frame policies. It includes central schools and secondary schools managed by the state government. In this study Government School affiliated to U.P. Board taken in the Study.

Aided Senior Secondary School

These are the schools run by some registered bodies or religious trusts but get financial aid andgrants from the state government in accordance with rules and regulations prepared by the state government. Usually, the government grant meets most of the expenditure on teacher's salaries etc. In this study Aided School affiliated to U.P. Board taken in the Study.

Private Senior Secondary School

These are the schools managed by private agencies. They do not get grants from the government and self-finance in nature. The institution is managed by local bodies, governmentframe rules and regulation of schools. Administration of schools and textbooks, curriculum and standard of examination are determined by the board of secondary education. In this study Private School affiliated to U.P. Board taken in the Study.

OBJECTIVES OF THE STUDY

1. To study the Academic Achievement in relation to the learning style of senior secondary school students on the basis of the nature of institution. (i.e., government, aided and private)
2. To study the academic achievement of government, aided and private school students at senior secondary level.

3. To study the academic achievement among male students of government, aided and private school students at senior secondary level.
4. To study the academic achievement among female students of government, aided and private school students at senior secondary level.
5. To study the Academic Achievement in relation to enactive learning style of senior secondary school students on the basis of the nature of the institution. (i.e., government, aided and private)
6. To study the Academic Achievement in relation to the figural learning style of senior secondary school students on the basis of the nature of institution. (i.e., government, aided and private)
7. To study the Academic Achievement in relation to verbal learning style of senior secondary school students on the basis of nature of institution. (i.e., government, aided and private)
8. To study the learning style of government, aided and private school students at senior secondary level.
9. To study the learning style among male students of government, aided and private school students at senior secondary level.
10. To study the learning style among female students of government, aided and private school students at senior secondary level.
11. To study the Academic Achievement in relation to Achievement motivation of senior secondary school students on the basis of the nature of the institution. (i.e., government, aided and private)
12. To study the achievement motivation of government, aided and private school students at senior secondary level.

13. To study the achievement motivation among male students of government, aided and private school students at senior secondary level.

14. To study the achievement motivation among female students of government, aided and private school students at senior secondary level.

HYPOTHESES OF THE STUDY

For Objective 1 Following Hypothesis have been formulated

1.1. There is no significant relationship between Academic Achievement and learning style of senior secondary school students.

1.2 There is no significant relationship between Academic Achievement and learning styleof government senior secondary school students

1.3 There is no significant relationship between Academic Achievement and learning style of aided senior secondary school students

1.4 There is no significant relationship between Academic Achievement and learning style of private senior secondary school students

For Objective 2 Following Hypothesis have been formulated

2.1 There is no significant difference in academic achievement of government and aided school students at senior secondary level.

2.2 There is no significant difference in academic achievement of government and Private school students at senior secondary level.

2.3 There is no significant difference in academic achievement of aided and private school students at senior secondary level.

For Objective 3 Following Hypothesis have been formulated

3.1 There is no significant difference in academic achievement of male students of government and aided schools at senior secondary level

3.2 There is no significant difference in academic achievement of male students of government, and Private school at senior secondary level.

3.3 There is no significant difference in academic achievement of male students of aidedand private school at senior secondary level.

For Objective 4 Following Hypothesis have been formulated

4.1 There is no significant difference in academic achievement of female students ofgovernment, and aided schools at senior secondary level.

4.2 There is no significant difference in academic achievement of female students ofgovernment, and Private school at senior secondary level.

4..3 There is no significant difference in academic achievement of female students of aidedand private school at senior secondary level.

For Objective 5 Following Hypothesis have been formulated

5.1 There is no significant relationship between Academic Achievement and enactivelearning style of senior secondary school students

5.2 There is no significant relationship between Academic Achievement and enactivelearning style of government senior secondary school students

5.3 There is no significant relationship between Academic Achievement and enactivelearning style of aided senior secondary school students

5.4 There is no significant relationship between Academic Achievement and enactive learning style of private senior secondary school students

For Objective 6 Following Hypothesis have been formulated

6.1 There is no significant relationship between Academic Achievement and figural learning style of senior secondary school students

6.2 There is no significant relationship between Academic Achievement and figural learning style of government senior secondary school students

6.3 There is no significant relationship between Academic Achievement and figural

learning style of aided senior secondary school students

6.4 There is no significant relationship between Academic Achievement and figural learning style of private senior secondary school students

For Objective 7 Following Hypothesis have been formulated

7.1 There is no significant relationship between Academic Achievement and verbal learning style of senior secondary school students

7.2 There is no significant relationship between Academic Achievement and verbal learning style of government senior secondary school students

7.3 There is no significant relationship between Academic Achievement and verbal learning style of aided senior secondary school students

7.4 There is no significant relationship between Academic Achievement and verbal learning style of private senior secondary school students

For Objective 8 Following Hypothesis have been formulated

8.1 There is no significant difference in learning style of government and aided schoolstudents at senior secondary level.

8.2 There is no significant difference in learning style of government and private schoolstudents at senior secondary level.

8.3 There is no significant difference in learning style of aided and private school studentsat senior secondary level.

For Objective 9 Following Hypothesis have been formulated

9.1 There is no significant difference in learning style of male students of government andaided school at senior secondary level.

9.2 There is no significant difference in learning style of male students of government and private school at senior secondary level.

9.3 There is no significant difference in learning style of male students of aided and private school at senior secondary level.

For Objective 10 Following Hypothesis have been formulated

10.1 There is no significant diff erence in learning style of female students of government and aided school at senior secondary level.

10.2 There is no significant difference in learning style of female students of government and private school at senior secondary level.

10.3 There is no significant difference in learning style of female students of aided and private school at senior secondary level.

For Objective 11 Following Hypothesis have been formulated

11.1 There is no significant relationship between Academic Achievement and Achievement motivation of senior secondary school students.

11.2 There is no significant relationship between Academic Achievement and Achievement motivation of government senior secondary school students.

11.3 There is no significant relationship between Academic Achievement and Achievement motivation of aided senior secondary school students.

11.4 There is no significant relationship between Academic Achievement and Achievement motivation of private senior secondary school students

For Objective 12 Following Hypothesis have been formulated

12.1There is no significant difference in achievement motivation of government and aided school students at senior secondary level.

12.2 There is no significant difference in achievement motivation of government and private school students at senior secondary level.

12.3 There is no significant difference in achievement motivation of aided and private school students at senior secondary level.

For Objective 13 Following Hypothesis have been formulated

13.1 There is no significant difference in achievement motivation of male students of government and aided school at senior secondary level.

13.2 There is no significant difference in achievement motivation of male students of government and private school at senior secondary level.

13.3 There is no significant difference in achievement motivation of male students of aidedand private school at senior secondary level.

For Objective 14 Following Hypothesis have been formulated

14.1 There is no significant difference in achievement motivation of female students of government and aided school at senior secondary level.

14.2 There is no significant difference in achievement motivation of female students of government and private school at senior secondary level.

14.3 There is no significant difference in achievement motivation of female students ofaided and private school at senior secondary level.

DELIMITATION OF THE STUDY

Because of limited time and resources as well as to make this research more meaningful the present study was bounded in the below aspect:

- The study was limited to the class XIth students only studying in U.P. Board Schools.
- The study was delimited to only government, aided and private schools affiliated to U.P. Board.
- The study was delimited to the sample of 300 students only.
- The study was limited to Lucknow city only.
- This study was limited to Academic Achievement, Learning Style (Enactive, Figural and Verbal) and Achievement Motivation of senior secondary school students.

CHAPTER II

REVIEW OF RELATED LITERATURE

CONCEPT OF REVIEW LITERATURE

'Review' of 'Literature' means to look again or to organize the knowledge of specific area of research; and to involve an edifice of knowledge' that would imply an addition to the corpus of knowledge in the concerned field; an inclusive investigation of a piece of research that reflects its own perspective in the light of its immediate significance; and its implications for the future. Review of related literature thus means to locate, to read and to evaluate the past as well as current literature for the planned investigation.

Research in any field implies a step ahead in the exploration of the unknown concepts. One such preparation is the collection of appropriate knowledge of what has already been done in a particular field. A step towards the unknown can only be taken after a thorough review of the related literature and research conducted in that area. Any research without such a review of related literature is likely to be a building without any foundation. The review of related literature provides a clear picture of the study to be taken as a prerequisite to the proper planning of the problem and conducting the research. The review of the past investigations in a particular field serves as a guide to the investigator as it helps her to avoid duplication of the work already done in that area. The knowledge that what has already been done in the area of research regarding the methods used for data gathering and the results of their analysis, keeps the investigator systematic in his/her own endeavour.

According to Borg 2007, the literature in any field forms the foundation upon which all future work will be built. If we fail to build the foundation of knowledge provided by the review of

literature our work is likely to be shallow and naive and will often duplicate work that has already been done better by someone else.

The survey of related literature may provide guiding hypotheses, suggestive methods of investigation and comprehensive data for interpretive purpose as per Good, 1973.

The finding of earlier experiments encourages the new workers to embark upon the useful projects in education, on the basis of earlier experiments avoiding the past mistake of defects. It will be useful to see as to what has already been done concerning the problem in hand.

Survey of related studies provides ideas, theories, explanations, and hypotheses valuable in formulating the problem. This also locates competitive idea data useful in the interpretation of the results. The investigator scanned the literature related to present problems which are useful in bringing about improvement in the design of present study and also in order to get in right about the real nature of the problem. Thus, it is quite desirable to have a glance over the work done in related fields. In a research problem, the term literature stands for collective body of related works done in the past by earlier researchers. It is in fact a beginning point of any scientific investigation. A careful review of earlier studies makes the researcher aware of significant and relevant studies in the concerned area of research. It also helps him in selecting, defining and operational variables lying within the scope of study. He can select such variables conceptually and practically important for this study. Duplication of the research is controlled with the help of review. Review aims at giving an insight about the previously done researches and highlighting the benefits of those studies for the research work in hand. This review work provides a foundation for the research work to be undertaken. A careful review of the literature also enables the researcher to collect and synthesize prior studies related to the present investigation. This, in turn, helps him build a better perspective for future research. A synthesized collection of prior studies helps to identify significant overlaps and gaps among

prior work. Review of the related literature is very useful in establishing relationships between variables. This relationship can be incorporated into different hypotheses. Thus, for conducting a scientific study, the relationship between different variables must be employed by reviewing literature so that a good content may be built up for subsequent investigation.

IMPORTANCE OF REVIEW LITERATURE

Importance Review of previous research in the associated area of investigation is extremely important to help an investigator in identify the problem, search for tools, design etc; invariably a wise step to minimize the risk of dead ends, wasteful efforts, understand the nature and magnitude of work done involved; and the direction in which to move to make a meaningful contribution in the concerned subjects.

Some of the important reviews of research studied related to the problem under investigation are as:

STUDIES RELATED TO ACADEMIC ACHIEVEMENT

Latha and Rani, 2004 studied the relationship among achievement in academic field, family environment and adjustment in family on pre-adult students. He found that the family environment seemed to impact home adjustment just as scholarly accomplishment. Performance in academics was fundamentally linked with independence and conflict dimensions with family adjustment. Male students and female students varied in their perceptions of the family environment.

Patil Ajay Kumar Bhimrao, 2006 Conducted a study on Emotional Intelligence among student teachers in relation to sex, faculty and academic achievement. The finding showed that male and female student teachers did not differ significantly in emotional intelligence. It was

also found that student teachers of science and art faculty were not significantly different in the emotional intelligence. It was also concluded that there is no significant relationship between the emotional intelligence and academic achievement of student teachers.

Gakhar, S.CE' Manhas, K.D. in 2006 Conducted a study on Emotional Intelligence as correlates to academic achievement, intelligence and creativity .Sample size of 400 XI class male and female adolescents from government and private schools situated in urban and rural areas in state of Jammu and Kashmir were used for the study. Results of the study revealed that there is positive relationship between general intelligence and emotional intelligence (r=.208). Also from the result, adolescent's creativity was positively and significantly correlated with their Emotional Intelligence (r=.610). There is also significant positive correlation between academic achievement and emotional intelligence (r=.128)

Mittal in (2008) did research to find a relation of locality and mental health of 10^{th} class students on their academic achievement. A sample of 640 students of secondary level school was picked. The results highlighted secondary level school students of different localities differ significantly in their academic achievement; students of urban areas were found better in academic achievements as compared to their counterpart rural students. He further stated that students of urban areas had better teaching – learning environments at home as well as at school than rural locality students. A significant and positive relationship was found between mental health and academic achievement of secondary level students belonging to different localities."

Mehra and Thakur in 2008 conducted a study on the effect of cooperative learning on retention and achievement in Mathematics of Seventh graders with different cognitive styles. A sample of 112 students was taken. The obtained data was evaluated with the help of three-way analysis of variance. The major findings of the study were:

Those students who were taught with cooperative learning showed better mean gain on achievement scores than conventional learning.

Kumari Rajani and Garita Radhakanta in 2012 investigated the relationship between academic achievement and stress among 12 class school students. A total of one hundred twenty 12^{th} class school students randomly selected from six senior secondary schools of North-western Delhi participated in the study. Three null hypotheses were tested using data generated from research instruments. The instrument included Stress Inventory designed and standardized by Nangia, 1990. Academic achievement was taken from the students' previous examinations. Results showed a positive correlation between stress and academic achievement of students having low, moderate and high stress. Students having high and moderate stress performed better than the students having less stress. Further, it was also found that stress and academic achievement are not mediated by gender.

Mehar and Sekhri in 2012 Conducted a study on Effect of cooperative learning Strategy on Achievement Mathematics in relation to self-esteem. For this purpose, a sample of 100 students of class VIII was taken and a pre-test post test was conducted in Mathematics. For evaluating the data (2*2) analysis of variance was used. The study reveals the following findings-

The cooperative learning strategy was more similar to traditional teaching strategy.

The performance of students of different self-esteem groups was not found significant by cooperative learning strategy

In respect to gaining scores, the treatments were not found suitable for interaction with various self-esteem groups. On the basis of all findings, it is clear that cooperative learning strategy is a better strategy at the secondary level stage for teaching Mathematics.

Dr. Suvarna V.D. and DR. H.S. Ganesha in 2015 conducted research on Personality and Academic Achievement of Secondary school students of Madhya Pradesh. A sample size is of 300 students were used in the study. Academic scores were collected using Raven's Standard Progress Matrices and Eysenck personality inventory was used to collect personality traits. Findings showed that there is hardly any correlation between academic achievement and personalities of senior secondary school students .

Meenu Dev in 2016 conducted a study on Factors affecting achievement in educational field of Elementary School Students of NCR, Delhi, India. The main objective of the study was to investigate and evaluate the relationship of Interest, General Mental Ability and environment at home with Academic Achievement. The sample size was 110 students which were collected from Kendriya Vidyalaya of Delhi. Their ages ranged between 13-14 years with a mean age of 13.6 years. R.K. Tandon General mental ability test, 1972 and of S.K. Bawa Multiphasic Interest Inventory 1998 and Home Inventory of K.S. Mishra 1989 was administered. Annual examination grades of class 7 were considered as A.A. It was found that General Mental Ability, home environment and A.A. were significantly and positively correlated whereas the high score of girls indicate that they are superior to boys.

Chauhan, Sarika in 2017 presented a paper entitled, A study of Level of Aspiration in predicting academic achievement among secondary school students in the 3rd International Conference on Latest Innovations in Science, Engineering and Management. This study investigated the role of level of aspiration in predicting academic achievement among secondary school students. The findings of this study reported a significant and positive relationship between level of aspiration and academic achievement.

Dr. S.K. Upadhyay and Raino in 2017 carried out a study on academic achievement among senior secondary school students in relation to study habits. Academic Achievement was

treated as dependent variable and Study Habits was treated as independent variable. Present study carried out through Descriptive Survey method. Samples were collected through Stratified random sampling. The sample of 300 senior secondary school students studying in 11th standard in various schools of New Delhi Academic Achievement considered as total marks obtained in the previous class i.e. 10^{th}. Study habit Inventory by Mukhopadhyay and Sansanwal (2011) was used to examine the study habits among students. Mean, Standard Deviation, t—test and coefficient of correlation were used to analyze the data. The result showed that Academic Achievement of male and female students of senior secondary schools do not differ significantly. Results revealed that there exists a significant relationship between academic achievement and study habits of senior secondary school students.

M.Y Ganaie, Hafiz Mudasir in 2018 conducted a study of social intelligence and academic of college students o district Srinagar the purpose of the study is to examine and measure the social intelligence and academic achievement of college student the study revealed that social science college students have better social intelligence than science college students however it also found that science students have better academic achievement than their counterparts.

Praveen Lata in 2019 conducted a study of academic cheating among adolescents in relation to locus of control, academic achievement, academic stress and ego strength. The data of senior secondary school students from east west north south zones of Haryana state to analyse and interpret academic cheating among adolescents in relation to locus of control academic achievement academic stress and ego strength to find it the relationship between different variables Pearson Product Moment correlation was applied findings revealed that there is no relationship between academic cheating and external locus of control. Academic cheating and academic achievement are positively correlated. Academic cheating and academic stress are not correlated with each other. Academic cheating is positively correlated with ego strength.

Mahmud, Chanda, and Al Zabir, 2020 studied the factors that have an impact on the university students' academic achievements in the Sylhet Region were identified. The perspectives of students were collected to discover the factors that influence academic performance. This was found that the students who attended the class frequently had comparably less academic stress, complete assignments on time, and devote more time to academic study were shown to have higher academic grades. When additional factors considered this was revealed that students who belong to nuclear family received higher grades than those from the extended family. Furthermore, students who had ample access to nutritious food and were pleased with their present living conditions had high academic results.

Brew et al. 2021 done a review study on the students' academic performance at Senior high schools and the many elements that influence students' achievement. As per the study findings, truancy has a considerable negative influence on academic performance and even drop school. It was also discovered that other factors such as students' parental levels of education and income, textbook availability and accessibility, libraries, practical laboratories, meal provision and teachers were all factors that should be monitored and adjusted regularly to meet their needs and aspirations. Students' academic performance would also be improved allowing them to attain their life goals in the long run.

Kocak, Goksu and Goktas 2021 studied to find the factors and establish their impact on academic achievement through a series of papers that included meta-analysis. Systematic review technique was used in this investigation. There were variables of 9 categories which was found in this study which were derived through meta-analyses with impact values ranging from - .799 to 3.170. As discovered by the results, several variables evaluated in the socio demographic, socio economic, psychological and family teaching strategies and learning theories, individual characteristics were more significant than the number of variables evaluated in the other types.

STUDIES RELATED TO ACADEMIC ACHIEVEMENT AND ACHIEVEMENT MOTIVATION

Baskaran in 1991 investigated Achievement motivation, attitude towards problem solving and achievement in mathematics of standard XIth students. 200 hundred students consisting of a group of 100 boys and girls each were picked as a sample. The result revealed that there was a significant relationship between achievement motivation and a) achievement in mathematics b) attitude towards mathematics problem solving and also showed that government and aided school students did not differ in achievement motivation.

Verma in 1992 studied the styles of learning, achievement motivation, anxiety and other ecological correlates of high school students of Agra region. A sample of 2000 students was selected using purposive sampling from Agra city. The study showed that parents' education and age levels of students were impacted in shaping the achievement motivation of high school students.

Alam in 2001 studied the relationship of academic achievement with SES, anxiety level and achievement motivation of students. The sample was comprised of Muslim and Non-Muslim students of the school of Uttar Pradesh. The result showed that the achievement motivation of non-Muslim children was found to be superior to Muslim children.

Singh and Kaur in 2003 undertook a task to identify the role of achievement motivation and parental background in academic achievement of students. Results showed that 83 students' achievement motivation had a positive correlation with academic achievement. It was also seen that students' achievement motivation and academic achievement is significantly affected by qualification of parents and working of parents.

Prakash, Satya and Patnaik in 2005 did a study to see if co-operative learning effects in any way achievement in biology and achievement motivation. Sample was picked from Tumkur, Karnataka. 200 students from three schools were selected for the study. They were divided equally in control group and experimental group. The group was divided on the basis of the score of intelligence test and achievement test of biology. It was found that cooperative learning had a positive effect on achievement motivation. Result reflected that achievement in biology also had a positive effect on cooperative learning. This effect was not only on total achievement but also on objectives related to knowledge, understanding and application level.

Bansal et al in 2006 conducted a study to find whether students' high and low achievement has any relation with achievement motivation, locus of control and status of home environment. Positive relation was observed between intrinsic locus of control and achievement motivation. It was found that students with high achievement had a quality home environment. There was also a significant relation between their motivation level and academic achievement.

Tella in 2007 tried to identify the effect of motivation on academic achievement in secondary school students in mathematics. Preference scale of motivation for academics was used along with achievement tests of mathematics. t-test and ANOVA were used to test the hypothesis at .05 significance level. Male and female students differ significantly when the effect of motivation was seen on academic achievement. Students also differ significantly on the degree of motivation affecting academic achievement of theirs in mathematics.

Umadevi in 2009 had a study on student-teachers of primary schools. They were from the different schools of Davangere, Karnataka. This study tried to find if there was any relation among achievement motivation, emotional intelligence and academic achievement. Bhargava test of Achievement motivation was used for the study. Student-teachers showed significant

relation between achievement motivation and academic achievement. Achievement motivation and emotional intelligence also showed positive significant relations.

Bakar et al in 2010 did a study to find the relation between achievement motivation, academic performance and attitude of students. Sample was collected using a cluster sampling method consisting of students from technical, agriculture, engineering courses along with the students of humanities, education and sciences. One thousand four hundred eighty four students were selected as a sample for study. A self-reported questionnaire was administered to collect data. Positive significant relation was found between achievement motivation and students' attitude towards learning. Academic achievement and students' attitude were also found in positive significant relation. But the relation between achievement motivation and students' academic achievement was found negative and low.

Awan et al in 2011 conducted research to find a relationship between academic achievement and achievement motivation. Relationship between academic achievement and self-concept was also studied. Sample size was 318 students. There were 172 female students and 146 male students. This study was done on secondary level students. The study concluded that academic achievement and motivation for achievement were significantly correlated. The same relationship was found between academic achievement and self-concept. Gender difference was observed in academic achievement of male and female students. Male students did not perform as well as female students.

Uwameiye & Osho in 2011 did a study on the students of clothing and textile courses. The aim of the study was to study the predictors of academic achievement. Attitude and motivation were selected as predictors. Sample of 40 students were selected from 60 schools. These students were in their 3rd year. Random sample technique was applied to select samples. Clothing and textile attitude scale, clothing and textile motivation scale, and clothing and textile

achievement test were administered to collect data. Attitude had been identified as the predictor of achievement in academic area of students. The study's conclusion was to employ all aspects of education to develop in students the appropriate attitude among students. Teachers were suggested to create such an environment that motivates students to learn.

Ahmad, Iftikhar and Rana, Shabbir in 2012 had a study to see if emotions and motivation has any influence on academic performance. The study was done on undergraduate students. Sample size was 538 students. There were two hundred ten boys and three hundred twenty-eight girls. The neuroticism scale of the NEO Five Factor Inventory (Costa and McCrae, 1992) and extroversion scale was administered to assess Negative affectivity and Positive affectivity respectively. It was found that a reverse significant relation was found between neuroticism and emotional intelligence. It means that a low level of neuroticism is an indicator of high level of emotional intelligence. Avoidance motivation was in positive relation with neuroticism, which means that high level of neuroticism reflects high level of avoidance motivation. Approach motivation less related to extraversion. Students with Low neuroticism showed higher GPA than the students having high and medium neuroticism. GPA was significantly related to high level of emotional intelligence and low level of neuroticism.

Abuameerh and Saudi in 2012 studied the relation between achievement motivation and academic achievement of students of secondary school at Salt city in Jordan. Total participants were 441 secondary school students. Results of the study indicated that achievement motivation was positively correlated with success in educational area. The study revealed that there was no significant difference in students' achievement motivation in relation to their gender.

Sekhar and Devi in 2012 studied achievement motivation of college students with respect to gender and stream of study. The sample consisted of 80 undergraduate students. Achievement Motivation Scale by Deo-Mohan (2011) was used to assess the achievement motivation of

college students. Study reported significant differences in achievement motivation of college students with respect to gender and stream of study, whereby female and science students were better in academic achievement than male and arts stream students.

Kaur in 2013 explored the relation of academic performance with achievement motivation of students of secondary school. The participants in the study were 200 secondary school students. The results of the study showed significant positive correlation between achievement motivation and academic achievement. Further, it was found that significant differences exist in academic achievement of students with regard to gender, however in case of achievement motivation no significant difference was found.

Kumar Mehta and Maheshwari in 2013 conducted a research work to find if psychological adjustment, achievement, motivation and scholastic achievement of students of secondary level school get influenced by their emotional intelligence. Only male students of urban areas studying in class X in Jaipur city were selected as a sample. Sample size was 450 students. Findings showed that Emotional intelligence has a significant effect on the achievement motivation of the students. It was also found that Emotional Intelligence has a significant effect on educational adjustment of students. But Emotional intelligence has not a significant effect on the emotional and social adjustment of the students. Emotional intelligence has not a significant effect on scholastic performance of students.

Kumra in 2013 did a study on the personality type and achievement motivation of secondary level students in relation to their academic achievement. Students of Government Schools, Chandigarh were selected as a sample. Sample size of 150 students was determined. Data was collected using multistage sampling. Students were divided into two groups- introvert personality and extrovert personality. Another group was made on the basis of high and low achievement motivation. Personality Inventory developed by Eyesenck and Achievement

Motivation scale developed by Deo Mohan were administered for data collection. Marks secured in the class 11th final exams were taken as the basis of Academic Achievement. It was found that Extroverts had lower academic achievement than that of introverts. Students with Low achievement motivation could not perform better than the students with high achievement motivation.

Veena and Shastri in 2013 conducted a study to find if the students of different courses, academic performance and gender differ in their achievement motivation. Sample of students was taken from undergraduate students studying in Bangalore. Sample size was 656 students from pure science and applied science background. Marks secured in the previous semester became the basis of Academic Achievement. Deo-Mohan Achievement Motivation scale (n-Ach) was administered to collect data. Hypotheses were tested using Mann Whitney U and Kruskal Wallisewere. Significant difference in achievement motivation of students of pure science and applied science background was found. It was observed that students having high and low academic performance did not differ significantly in their achievement motivation. The achievement motivation of boys and girls differed significantly.

Velmurugan and Balakrishnan in 2013 conducted a research work to see if there is any relation in locality and type of family with achievement motivation. Random sampling method was used to select the sample from Ariyalur and Perambalur districts in Tamil Nadu. Sample size of 600 students were administered the achievement motivation (A tool by Gopal Rao) test. The findings showed that students studying in rural and urban areas did not differ significantly in their achievement motivation. It was also concluded that the students belonging to joint family and nuclear family did not differ significantly in their achievement motivation.

Sikhwari in 2014 focussed the study to assess the relation between self-concept, motivation and academic achievement. This study was done at University in Limpopo Province. The study

aimed at identifying the gender difference between all the variables. Quantitative cross-sectional survey design was followed for the study. Random sample method was applied for selecting the sample. Data was collected from second year students through a self-constructed questionnaire. It was found that academic achievement, motivation and self-concept were significantly correlated. Male students were found to be less motivated than female students. Role of motivation and self-concept was emphasized in the research work for good academic achievement of the students. It was recommended that efforts should be made to improve and enhance motivation and self-concept among students.

Chetri in 2014 conducted a research work to identify the achievement motivation level of adolescents and also tried to find if it plays any role in academic achievement of theirs. The sample was from secondary level school students from Sikkim. Stratified random sampling technique was used for selecting sample students. Sample size was 480 students. Sample was collected from schools which were either Government or Government managed. The students were between the ages of 16 to 17 years. The sample students were both from rural and urban areas. Results: There was no significant difference between male and female students regarding achievement motivation; There was no significant difference between locale variation regarding achievement motivation; There was significant difference between Govt. and Govt. managed school students regarding achievement motivation; There was significant difference between Govt. and Govt. managed school students regarding academic achievement; There was no significant difference between locale variation regarding academic achievement; The significant relationship was found between academic achievement and achievement motivation at .05 and .01 level of significance.

Dahiya and Saini in 2014 did a study to find if intelligence had any effect on achievement motivation of the students. The nature of the study places it under type of descriptive survey research. The study was done on students of senior secondary schools. The students were 16-

18 years of age. Sample size was 200 students. The students were of class XII studying in public and govt. schools. Achievement Motivation Test (ACMT) by Dr. V.P. Bhargava and Mental ability group test by S.S. Jalota was administered to collect data. It was found that the achievement motivation of students in government and public schools differ significantly. It was also found that male and female students of government and public schools had a positive correlation between achievement motivation and intelligence.

Dhall in 2014 tried to find if there is any relation between academic achievement and achievement motivation and home environment of students. The study was done by secondary school students of ninth class studying in Govt. and Govt.-aided schools in Ludhiana city. The result showed the significant positive relationship between academic achievement and achievement motivation. The same relationship was found between academic achievement and home environment. The study revealed that there was no significant difference in achievement motivation and home environment of male and female students.

Sandhu in 2014 did a research work to see if achievement motivation and study habits had any relation with academic achievement of adolescents. Senior secondary school students of Govt. schools of Ludhiana city were the part of the sample. Sample size was 20 students of class XI. Marks secured in previous class were considered for academic achievement. Deo & Mohan Achievement Motivation Scale (2012) and Study Habit Inventory (2002) revised version by Mukhopadhyay and Sansanwal were administered for data collection. Academic achievement and motivation for achievement had a strong positive association. Academic achievement and students' study habits revealed the same conclusion.

Siddiqui in 2014 did a study on academic achievement and the role of achievement motivation in academic achievement of the students. Random sampling technique was used for sample selection. Sample was taken from Government and Private Schools of senior secondary level.

Male and female students were given the due consideration. Sample size was of 100 students studying in Rohtak district (Haryana). Achievement Motivation Test (AMT) developed By Dr. V.P. Bhargava was used for collecting data. Different statistical techniques such as Mean, sd and t-test were used to analyse data. No significant influence of achievement motivation was found on academic achievement of govt. and private school male and female students.

Yazdani and Godbole in 2014 conducted a study to find the role of time management and achievement motivation on academic achievement of the students. The sample was selected from class 7^{th} and 8^{th} students of Hyderabad. Sample size was 400 students. Mean, sd, Pearson's correlation and regression were applied for data analysis. Result: Academic performance was found in significant positive relation with time management and achievement motivation; it was also found that time management and achievement motivation strongly contribute to academic performance. On the basis of result, it can be concluded that better academic performance can be achieved with the help of effective time management and achievement motivation.

Kumar and Yadav in 2015 did a study which emphasized on the importance of motivation in academic achievement of students. The study focussed on the role of motivation in academic achievement of the students. Scholastic expectation and work habits were some of the measuring items involved in academic motivation. It was found that educational goals of the students were largely influenced by academic motivation. Girl students showed better academic achievement motivation than the boys of senior secondary schools. Students of Private schools showed better academic achievement motivation than the students of Govt. senior secondary schools.

Jain in 2015 did an intervention programme for Dalit girl students to find the level of Self Esteem, Subjective Well-being, Self-efficacy Achievement motivation and Academic

Performance. Pre-test, post-test design of one group was adopted for the study. Girls of SC and ST category belonging to low socio-economic status families and rural families were selected as a sample for the study. Sample size was of forty-four adolescent girl students of Govt. pre-matric hostel. Hypothesis was that intervention programmes would influence and upgrade their level of Self Esteem, Subjective Well-being, Self-efficacy Achievement motivation and Academic Performance. Communication skill, leadership training, effective time management, career opportunities, interpersonal skills, team building, physiological development, goal setting, psychological issues, dental hygiene, public speaking, personal hygiene, importance of nutrition, study habits, memory skills, how to face examination, reading habit, English training, yoga training, civic sense, self-esteem, assertive training, group dynamics, self-defence, life skill and women empowerment were the integral and concerned part of intervention programme. This programme ran for 10 months. Pre-test and post-test before and after intervention was given to the participants. t-test for correlated means was analysed for both the tests. Subjective well-being, academic performance, achievement motivation and self-efficacy showed significant improvement. Self-esteem did not show any significant improvement.

Kaur in 2015 conducted a study on university students' achievement motivation and its relationship with different styles of learning. The sample was selected from Punjabi University, Patiala. Sample size of 100 students was picked. Achievement Motivation Scale (n-ach) (1971) by Pratibha Deo and Asha Mohan and Learning Style Inventory (1971) developed by K.S Mishra were administered to collect data. Result: Achievement motivation of university students was not found in significant relationship with reproducing dimension of learning style; Achievement motivation of university students was found in significant relationship with constructing dimension of learning style

Santhakumari and Chamundeswari in 2015 studied the academic achievement of secondary school students and its relation with achievement motivation and study habits. Sample was

picked from the students of secondary schools. Sample size was 457 students. Survey method of research was followed. Achievement Motivation Scale (Beena, 1986) and Study Habits Inventory (Gopal Rao, 1974) were administered for data collection. Result: Achievement motivation and study habits were found significantly correlated; Achievement motivation and academic achievement were also found significantly correlated; Students of schools of various categories showed significant difference in achievement motivation, academic performance and study habits; Male and female students also showed significant difference in achievement motivation, academic performance and study habits.

Wani and Masih in 2015 investigated the achievement motivation level of senior secondary school students. They compared this level in context to gender and academic streams. Significant difference level was also sought for the students of govt. and private schools of senior secondary level. Purposive sampling technique was used for selecting the sample. Sample size of 200 senior secondary school students was decided. Gender consideration was there in the sample. Research method followed was Descriptive Research. Deo-Mohan achievement motivation scale was administered for data collection. SPSS was used for data analysis. Mean, sd. T-test and ANOVA was calculated. Results revealed that 46.5% of the total samples were average on achievement motivation scale. It was also found that girls' achievement motivation was better than that of boys. Students from different academic streams showed significant differences in their achievement motivation score. Students of Govt. senior secondary schools had high achievement motivation in comparison to the students of private schools.

Maheswari and Aruna in 2016 investigated the achievement motivation level of students of N.N. Ramanathan Iyyer high school, Karur. The study also tried to find if there was any socio-demographic effect on achievement motivation. Total 128 students were there in class X in the school, which constituted the universe of the research work. Data was collected through the

census method. Results: 55.5% of the total students were of low achievement motivation level. 44.5% of the total students were high in achievement motivation level. Male and female students showed a significant difference in achievement motivation. This significant difference was calculated by 'Z' test.

Chen, Su-Yen; Lu, Luo in May 2015, the role of Achievement Motivations and Achievement Goals in Taiwanese College students' cognitive, personal, and psychological outcomes explores how motivational factors are associated with the Taiwanese college students' cognitive, personal and social development by incorporating both relatively global, static self-attributes, such as, achievement goals, which are widely adopted internationally. It was found from the study that the institutions can encourage students to set their own motivational goals, rather than adopting goals which are set by the family or the clan, and to focus on self-referenced competence development and personal improvement.

Khanna, Alka in 2016 conducted a study to explore the relation of students' intelligence, achievement motivation and personality with their academic achievement. The study involved 400 senior secondary school students from both Government and private institutions of Gurgaon and Rohtak districts of Haryana, selected by using multi- stage stratified random sampling technique. The investigator determined the academic achievement of the students on the basis of marks obtained in Class-XI conducted by the Board of School Education, Haryana and CBSE, New Delhi. It was found that female students have better academic achievement than their male counterparts. The results showed that private school students had better academic achievement than the government school students. The study revealed that the type of personality traits did not have an impact on academic achievement. No significant difference was found in academic achievement of senior secondary students having low, average and high level of intelligence. The study also revealed a significant and positive correlation between academic achievement and student' achievement motivation.

Rather in 2016 analysed the impact of achievement motivation on academic achievement. He proposed a hypothesis to identify significant differences in academic achievement of different categories of achievement motivation. The different categories of achievement motivation were as- high, above average, average, below average, low, and lowest motivation. The result showed the significant mean difference between all categories of achievement motivation. It was also found that different categories of achievement motivation had a much difference in academic performance. It was observed that the higher the achievement motivation the higher is the academic achievement.

Rout and Pathak in 2017 investigated the correlation among academic achievement, achievement motivation and self-concept of the students. The study was done on undergraduate students studying in Amity University. Random sampling method was applied for selecting samples. Sample size was 85 students. The Achievement Motivation Scale and Robson's Self-concept Questionnaire was administered to collect data from students. Academic achievement was determined on the basis of Cumulative Grade Point Average also known as CGPA. Results showed that there was a positive significant relation between achievement motivation and academic achievement. The same relation was found between self-concept and academic achievement. Self-concept and achievement motivation also showed the same relation.

STUDIES RELATED TO LEARNING STYLES AND ACADEMIC ACHIEVEMENT

Verma in 2002 studied the learning style in relation to their academic achievement and certain demographic factors of 406 women students. Understanding of these results enables the government institutions where women students were superior to their counterparts on participant learning style: arts women students were higher in the use of collaborative learning style than Science women students.

Vyas in 2002 aimed to identify correlation of academic achievement, mental ability, learning style and other related ecological aspects. The sample was of undergraduate female students. Sample size was 545 female students. It was concluded that significant differences did not exist between academic performance of female students of arts and science streams. It was found that female students of rural and urban areas were significantly different in their learning styles. It was found that female students of rural and urban areas were significantly different in their mental ability.

Singh, Ramesh in 2008 examined the correlation between preferences in styles of learning and academic achievement of high school students. The sample of the present study was the 538 pupils studying in class XIth situated in the urban and rural locality of Dehradun District of Uttaranchal State. The data was collected using learning style inventory and record of annual examination. The conclusions are drawn:

Flexible, aural, short attention span, non-motivation centred, learning styles preferences have been observed to be positively affecting the academic achievement of urban pupils (both boys and girls)

Non flexible, visual, non-motivation centred and environment free learning style preferences have been observed to be positively affecting the academic achievement of rural pupils (both boys and girls)

Mega in 2008 Explored the achievement in academic field of students in relation to their preferred learning, thinking styles and study skills. This study conducted with the objective to study the correlation between measures of styles of learning, styles of thinking, study skills and academic achievement of students. The study results revealed that those students who had a stronger preference for learning through structural content, concrete experience, abstract learning and artistic aesthetic interest are likely to get higher academic marks in the

examination, stronger or weaker preference of students for six learning styles as understanding movement, of action, verbal explanation, open ended contents, divergent learning styles, convergent learning styles and temporal interest, is not related with increase or decrease in academic achievement of the students, those students who had stronger preference for thinking through imaginative thinking style are likely to get higher academic marks in the examination, as to the values of correlation

Singh, et.al. in 2011 intended at determining the learning styles and overall academic achievement of 317 students in a specific education. The study revealed that there was a significant correlation between learning styles and overall academic achievement, and also further revealed that low, moderate and high achievers have a similar preference of all learning styles.

Abidin in 2011 investigated the relationship between learning styles and overall academic achievement. In order to investigate this relationship a total of 317 students participated in this survey study. The Learning Style Survey instrument which is based on Joy Reid's perceptual learning style preference questionnaire (1987) was used. The statistical procedures employed in this study were one way ANOVA and multiple regression analysis. The analysis of data indicated a significant relationship between overall academic achievement and learning styles. It was also found that the high, moderate and low achievers have a similar preference pattern of learning in all learning styles. Moreover, the learning style framework does not change with subjects, where it actually plays an important role across all the subjects.

Zarina, Akhtar in 2011 compared the student learning styles, socio economic status and learning achievement of developed and under developed districts of Pakistan. 1580 secondary school students from both the areas were selected as samples. Learning style questionnaires, socio economic status scale and the student's scores in SSC examination were used to collect

data. The major findings were the high achievers of developed districts prefer avoidant and upper class of under developed districts prefer dependent learning style. The middle class students of developed districts prefer an independent learning style.

Neetu in 2012 did a study on Learning-thinking style of secondary level students. Relationship between Learning-thinking style and academic achievement was also the focus of the study. The prime concern of the research work was the relationship between the learning thinking style of secondary school students and academic achievement. The study results indicate a positively significant relation to learning-thinking style and academic achievement. Understanding of the results enables academic achievement is a factor which influences the learning-thinking style of secondary school students. Additionally, male and female students have not differed in respect to their academic achievement but they are different in respect to their learning-thinking style"

Hemalatha in 2013 conducted a study on styles of learning and their influence on academic performance. The objective of the research was to find out the effect of learning styles over academic achievement of students studying in selected colleges of Chennai district. Learners' perceptions, interactions, and reactions to the learning environment are influenced by their cognitive, affective and psychological styles of learning. Students differ in the ways they approach learning. The way in which the students approach the learning tasks and behaviour in learning situations determines their learning style. The sample of the study was 600 college students and the Learning Style Inventory was used. It is observed from the study that around 48% of students adopted analytical learning style, 36% of students adopted common sense learning style, 9.5% of students adopted imaginative learning style and the least percentage 5.6% students adopted dynamic learning style. There is a significant difference between UG and PG in common sense and dynamic learning style.

Yogaraj and Selvaraju in 2014 conducted a study on Metacognition and Learning style of B.Ed. students. The major findings of this study were that the levels of Metacognition of male and female secondary education students were moderate. Male and female secondary education students differ significantly in their visual, auditory, kinaesthetic learning style. There is a significant relationship between Metacognition and Learning style of secondary education students.

Ilayaperumal et al. in 2014 made a study on styles of learning and Thinking Styles in relation to academic achievement among class XI Students in Puducherry. The study was intended to find out the learning and thinking styles and their effect on academic achievement among the higher secondary students. In the study, the researcher adopted the Normative Survey type of Research design and a sample of 1250 XI standard students were taken using cluster sampling techniques. Style of Learning and Thinking (SOLAT) – A standardized tool by Venkataraman was employed. The study concludes that XI standard students who are dominated by the right hemisphere of the brain possess Academic Achievement more than the students who are dominated by the left hemisphere of the brain.

Thakkar in 2014 investigated the effect of learning styles on 1580 senior secondary school students in learning achievement in Ahmedabad. The study revealed that students did not prefer a dependent and collaborative style of learning and also further concluded that learning styles may not affect learning achievement but the achievement was affected by the system of examination.

The Babu study in 2015 intended at defining learning styles of 600 secondary school Students. Learning Style Inventory (LSI) developed by Karuna Shankar Mishra was used by him for collecting data. The main findings were learning better through figures than verbal and also seem to be better in reproducing learning than constructive learning.

Patil, et.al. in 2015 studied learning styles amongst first year SRTR. Government medical students of, Ambajogai, India, aimed at investigating the better understood our learners and their learning style characteristics. The study results indicated that 10.52 percentages preferred visual (learning from charts, flow diagrams and graphs,), 19.54 percentage auditory (learning from speech), 28.57 percentage kinaesthetic (learning from smell, taste and touch), 58.64 percentage a single mode of information presentation and 41.35 percentage preferred multiple modes of information presentation most of the students.

Anand and Rajendra Prasad, 2016 studied on learning styles of students studying in primary schools. The sample size consisted of 200 students which were collected through stratified random techniques. Percentage analysis method was used to analyse the data. Findings revealed that male students were better in kinesthetic styles. It was also found that urban students had better kinesthetic styles than the rural students.

Shah,2017 conducted a study on effectiveness of styles of learning on educational achievements sample size consisted of 603 secondary school students. Mean, standard deviation and t-test examine the data. The results revealed that no significant difference in educational achievement among students those who had different styles of learning. It was also found that girls were better in visual and kinesthetic styles of learning, but boys were better in auditory styles of learning.

Singh,2017 studied the relationship between academic achievement and cognitive styles of learning. The sample size consisted of 160 students of class 8^{th} from public school of Delhi. The results revealed that learners from field dependents and field independents (cognitive style) were different in their styles of learning.

Nabia, Luqman, Siddiquei and Ruhi Khalid,2018 studied the relationship between personality traits, learning styles and academic performance of E-learners in Pakistan. The

sample size consisted of 144 participants. The data were collected using Big Five Inventory (BFI) and Index of Learning Styles (ILS). It was found that extraversion was positively related with all four learning styles. No gender difference found in learning style of E-Learners. Grade Point Average (GPA) was positively correlated with three learning styles in three learning styles in this study.

Singh Simple and Dr. Kirti 2018 conducted a study on learning styles and academic achievement of senior secondary school students. The main aim of the study was to determine the learning style and academic achievement effect of government and private senior secondary school students living in different socio-environment. This study was ana analysis of learning style prevalent among secondary school students. It was conducted on three learning styles-visual, auditory and kinesthetic. It also tried to find put relation and effect of different learning style on academic achievement. Sample size consisted 300 students which was taken from $9^{th,}$ 10^{th} and 11^{th} standard Faridabad district in UP. Kinesthetic learning style was found to be more prevalent than visual and auditory learning styles among secondary school students. Positive high correlation was found between kinesthetic learning style and kinesthetic achievement.

Dahiya and Dahiya, 2019 researched the effect of academic cheating of students studying in secondary schools with relation to learning style. Sample size consisted of 600 students. It was found that gender was reported to have no significant effect on academic cheating. Also, double interaction effect of learning style and gender had a significant effect on academic cheating of secondary school students.

Namaziandost Ehsan,2021 conducted a study on relationship between learning styles and academic performance among visual nursing students: A cross-sectional study. 237 virtual nursing students were enrolled by convenience sampling method. The VARK learning styles questionnaire was used for data collection. The basis for determining academic performance

was the GPA of the previous semester. The students were divided into two groups based on their GPA (≥15) and GPA (≤14.99). The most common learning styles in strong and weak students were kinesthetic (57.1%) and auditory (37.2%), respectively. The results of chi-square test did not show statistically significant differences between learning styles and academic performance of strong and weak students.

AN OVERVIEW OF THE REVIEW OF THE RELATED LITERATURE

Ajay Kumar, 2006 concluded that emotional intelligence and academic achievement of student teachers. Gakhar, 2006 found a positive relationship between general intelligence and emotional intelligence. He also found a positive correlation between academic achievement and emotional intelligence. Mittal, 2008 concluded that students of urban areas were found better in academic achievement as compared to rural students. He also found a positive relationship between mental health and academic achievement.

Mehra and Thakur, 2008 found that students who were taught with cooperative learning showed better mean gain on achievement scores than conventional learning. Dr. Suvarna, found in her study that there was a positive relationship between academic achievement and personality of students studying in secondary schools. Chauhan and Sarika, 2017 found a positive relationship between level of aspiration and academic achievement Dr. S.K. Upadhyay, 2017 found no discernible difference in academic achievement of male and female senior secondary students and found relationships between academic achievement and study habits.

In review literature of learning style Babu, 2015 found that learning of secondary school students is better through figures than verbal and he also found that better reproducing learning than constructive learning. Thakkar, 2014 found in his study that learning outcomes may not be impacted by learning style; instead, the examination system may have had an impact.

Yogaraj found a significant relationship between Metacognition and learning style of secondary education students. Hemlata, 2013 found that 48%students adopted analytical learning style Neetu, 2013 found a positive significant relationship between learning thinking style and academic achievement.

In review literature of achievement motivation, it was found that-

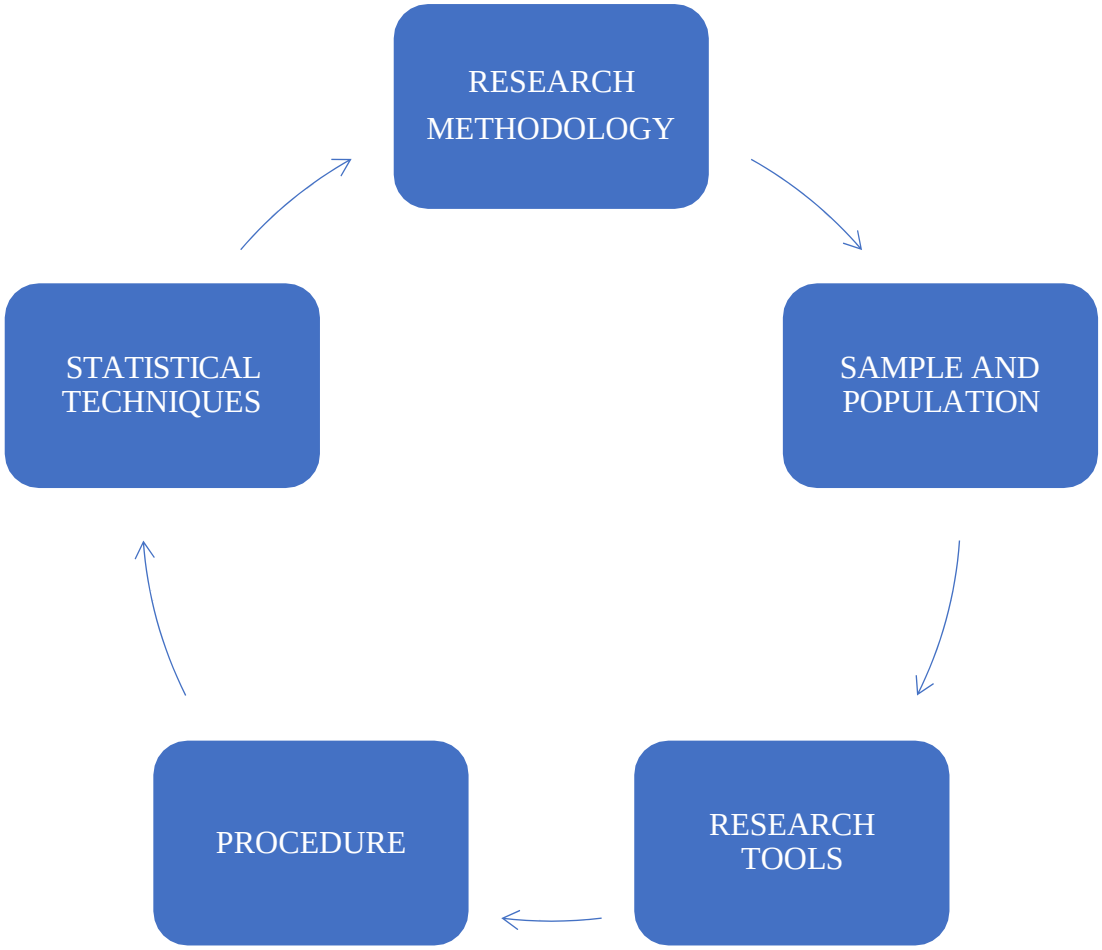
Rather, 2016 found that Achievement increases with the increase in achievement motivation. Khanna Alka, 2016 found that private school students had better academic achievement than government school students. It was also found positive relationship and academic achievement motivation of students Chen-Su-Yen, 2015 conducted the study on the role of Achievement Motivation and Achievement Goals in Taiwanese College students. It was found that institutions can encourage students to set their own motivational goals.

Kaur, 2015 conducted a study on different styles of learning. To study its relationship with achievement motivation was also the aim of the study. It was found that a significant relationship was not found between achievement motivation and the reproducing dimension of learning style. It was also found that the constructive dimension of learning style showed no significant relation with achievement motivation.

To conclude, we can say that some studies have been done in the area of academic achievement of senior secondary school students with relation to achievement motivation, but very few studies have been found in studying the combined relationship of achievement motivation and learning style with academic achievement. It has also found that no studies done on academic achievement with relation to achievement motivation and learning style in Lucknow city. Therefore, the present study can be considered original in its outlook and approach.

CHAPTER III

RESEARCH METHODOLOGY



The research design does not tell us precisely what to do but rather suggests the direction of observations in making the analysis, as per Kerlinger.

Research is a scientific and systematic search for related information on a specific topic; it is an art of scientific investigation. Research of any kind is a careful investigation through search for new facts.

According to J. W. Best - Research is considered to be more formal, systematic, intensive process carrying on the scientific method of analysis it involves a more systematic structure of investigation usually resulting in some sort of formal record of procedures and a report of result or conclusion.

Research design gives information about research methods, tools used in research, process of collecting data, scoring, population, samples taken for research and appropriate statistics used. Thus, research design provides the structure and strategy that control investigation and provides exact dependable answers to the questions raised by the research hypothesis. To complete the research successfully and to prepare a good research report it is necessary to draw an outline of the study. This chapter provides a description of the research design.

According to J. W. Best - Educational research is that activity which is directed towards development of a science of behaviour in educational situations. The ultimate aim of such a science is to provide knowledge that will permit that educator to achieve his goals by the most effective method.

In this chapter the details of the method and procedure adopted for achieving the objectives of this study has been described. This chapter consists of the following sections:

- Method of the study
- Population
- Sample and Sampling technique
- Variables of the study
- The Tools
- Statistical Techniques

RESEARCH METHODOLOGY: Thus, Research methodology is a systematic procedure followed by the researcher to lay out his research in its scientific and valid manner it involves the preparation of research design. Researchers have been classified differently depending upon the approach, purpose and the nature of a research activity.

The nature of the problem determines the appropriateness of the method to be used in any research work. The present research attempts to study academic achievement with relation to learning style and achievement motivation of senior secondary school students. It is a quantitative study. Descriptive survey method has been used for present study. It deals with the relationship between variables, the testing of hypotheses and development of generalization of principles.

Descriptive research can answer questions such as ‘what is’ or ‘what was. Here the information is collected without changing the environment (i.e., nothing manipulated). It includes surveys and fact-finding enquiries with adequate interpretation.

VARIABLES

Any measurable attribute of objects, things or beings is called a variable as per D’Amato

Any characteristic which is subject to change and can have more than one value such as age, intelligence, motivation, gender etc.

TYPES OF VARIABLES

The variables are classified into categorical and quantitative variables. Quantitative variables vary in degree or amount such as annual income, and categorical variables vary in type or kind such as gender.

On the basis of causation, the variables are basically of two types, namely independent and dependent variables.

DEPENDENT VARIABLE (symbolized by DV)

Variable affected by the independent variable and it responds to the independent variable. In other words, these variables are the presumed effect or outcome. Dependent variables are

influenced by one or more independent variables. Dependent variable is also known as the outcome or response variable.

INDEPENDENT VARIABLE (symbolized by IV)

Variable that is presumed to influence other variables. It is the presumed cause; whereas the dependent variable is the presumed effect. Independent variable is also known as the manipulated, experimental or treatment variable.

INTERVENING VARIABLES

These were also termed as mediator variables. They establish a link between IV and DV.

In this research work:

DEPENDENT VARIABLE (symbolized by DV)

- **ACADEMIC ACHIEVEMENT**

INDEPENDENT VARIABLE (symbolized by IV)

- **LEARNING STYLE**
- **ACHIEVEMENT MOTIVATION**

INTERVENING VARIABLES

- **GENDER OF THE STUDENTS**
- **NATURE OF INSTITUTION (Government, Aided and Private senior secondary schools affiliated to U.P. BOARD)**

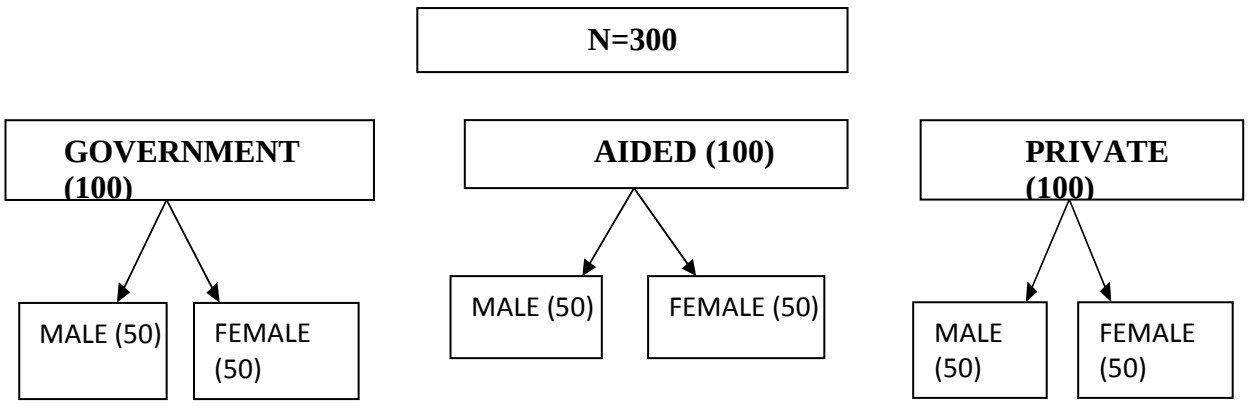
POPULATION

A population is a group of individuals who have common characteristics that are of interest to the researcher. In other words, a population is defined as a group of individuals with at least one common characteristic which distinguishes that group from other individuals - Best, 1977. All the senior secondary school students studying in 11th class in various schools of Lucknow City affiliated to UP BOARD, constituted the target population for the present study.

SAMPLE

A sample is a small proportion of the population that is selected for observation and analysis. In other words, "A group chosen from a larger population with the aim of yielding information about this population as a whole is termed as sample". Keeping in view of expenses, time, utility and suitability, the target sample comprised 300 students of senior secondary schools affiliated with U.P. Board. List of schools affiliated with U.P. BOARD was collected from DIOS office Lucknow. In this study Random Sampling Technique was used for collection of samples. 100 students from Government, 100 students from Aided and 100 students from Private senior secondary schools affiliated to UP Board in Lucknow city were selected as sample.

LAYOUT OF SAMPLE



LIST OF SENIOR SECONDARY SCHOOLS AFFILIATED WITH UP BOARD

GOVERNMENT SENIOR SECONDARY SCHOOLS

MALE	**FEMALE**
COLLEGE NAME	COLLEGE NAME
GOVT. JUBLEE INTER COLLEGE LUCKNOW **(No. of students. 10)**	GOVT. GIRLS INTER COLLEGE SHAHMINA LUCKNOW **(No. of students. 10)**
GOVT. HUSSAINABAD INTER COLLEGE LUCKNOW **(No. of students. 10)**	GOVT. GIRLS INTER COLLEGE INDIRA NAGAR LUCKNOW **(No. of students. 10)**
PT. DEEN DAYAL UPAADHYAY GOVT. MODEL INTER COLLEGE LUCKNOW **(No. of students. 10)**	GOVT. GIRLS INTER COLLEGE GOMTI NAGAR LUCKNOW **(No. of students. 10)**
GOVT. BLIND I C RAJAJIPURAM LUCKNOW **(No. of students. 10)**	GOVT. GIRLS INTER COLLEGE VIKAS NAGAR LUCKNOW **(No. of students. 10)**
GOVT. INTER COLLEGE NISHATGANJ **(No. of students.10)**	VIRANGANA UDA DEVI GOVERNMENT GIRLS INTER COLLEGE **(No. of students. 10)**
50	**50**

AIDED SENIOR SECONDARY SCHOOLS

MALE	FEMALE
COLLEGE NAME	COLLEGE NAME
KALI CHARAN INTER COLLEGE LUCKNOW **(No. of students.10)**	KARAMAT HUSSAIN INTER COLLEGE LUCKNOW **(No. of students.10)**
COLVIN TALUQDARS COLLEGE LUCKNOW **(No. of students.10)**	KHUNKHUNJI GIRLS INTER COLLEGE LUCKNOW **(No. of students.10)**
AMINABAD INTER COLLEGE LUCKNOW **(No. of students.10)**	MAHILA VIDYALAYA INTER COLLEGE LUCKNOW **(No. of students.10)**
JAI NARAYAN INTER COLLEGE CHARBAGH LUCKNOW **(No. of students.10)**	NAVYUG KANYA INTER COLLEGE LUCKNOW **(No. of students.10)**
RAMA DHIN SINGH INTER COLLEGE BABUGANJ LUCKNOW **(No. of students.10)**	GURU NANAK GIRLS INTER COLLEGE LUCKNOW **(No. of students.10)**
50	**50**

PRIVATE SENIOR SECONDARY SCHOOL STUDENTS

COLLEGE NAME	MALE	FEMALE
ERAM INTER COLLEGE INDIRA NAGAR LUCKNOW	10	10
BABY MARTIN PUBLIC SCHOOL CHOWK LUCKNOW	10	10
SHAKTI VIDYA PEETH INTER COLLEGE CHINHAT LUCKNOW	10	10
BRIGHT WAY INTER COLLEGE ALIGANJ LUCKNOW	10	10
MAHAMANA MALAVIYA VIDYA MANDIR INTER COLLEGE GOMTI NAGAR LUCKNOW	10	10
TOTAL	50	50

DESCRIPTION OF TOOLS

Selection of tools depends upon the objectives of the study and the size and nature of the sample. Gathering specific information on a variety of topics and sub topics from a large number of samples which are available at one place is possible only with the help of appropriate tools. The investigator has used the following tools for her study:

1. **LEARNING STYLE INVENTORY BY KARUNA SHANKAR MISRA, 2012**
2. **ACHIEVEMENT MOTIVATION SCALE BY PROF.PRATIBHA DEO AND DR. ASHA MOHAN**
3. **ACADEMIC ACHIEVEMENT SCORES WERE TAKEN OF CLASS 10th senior secondary school students studying in Government, Aided and Private Schools affiliated with UP Board.**

LEARNING STYLE INVENTORY BY KARUNA SHANKAR MISRA, 2012

LSI has identified six learning styles:

(1) Enactive Reproducing: It indicates one's preference for action based concrete experiences. The emphasis is on imitation and practice. It is reproduction oriented.

(2) Enactive Constructive: It indicates preference for conceptualization of one's experiences based on the processing enactive information.

(3) Figural Reproducing: It refers to one's preference for visual experiences related to making diagrams, chart pictures, maps and photographs. The emphasis is in imitation and practice. It is reproduction oriented.

(4) Figural Constructive: It refers to one's preference for processing of figural experiences which will lead to conceptualizations.

(5) Verbal Reproducing: It refers to written or spoken information related to subject matter communicated through words.

(6) Verbal Constructive: It refers to the preference for reflective, accommodative and abstract thinking about subject matter so as to develop conceptualizations.

The 1 and 2 can be clubbed to as **Enactive Learning Style**, 3 and 4 may be combined to mean **Figural Learning Style**, and 5 & 6 can be combined to mean **Verbal Learning Style**, and 1, 3 and 5 taken together mean **Reproducing Learning Style**, and 2, 4, and 6 when combined refer to **Verbal Constructive Learning Style**.

ITEM ANALYSIS

VERY MUCH	MUCH	NORMAL	LESS	VERY LESS
5	4	3	2	1

The Mishra's Learning Style Inventory (LSI) is a standard tool used to assess students 'learning preferences. The Learning Style Inventory is a self-report tool consisting of 42 items to be checked in which students describe their learning style preferences. Each item belonged to three learning styles, namely: enactive, figural and verbal. Each learning style had two components viz., 'Reproducing' and 'Constructive'. Number of items belonging to enactive, figural and verbal learning styles was 16, 16 and 32 respectively. Students were asked to indicate the extent of their preference for each learning behaviour. Five response alternatives were given. They are: Very Much, Much, Normal, Less and Very Less. Responses were scored by awarding a score 5, 4, 3, 2, and 1 respectively.

SCORING:

There are five response alternatives for each learning behaviour. They are: Very Much, Much, Normal, Less and Very Less. These responses are to be scored by awarding a score

5, 4, 3, 2, and 1 respectively. Scores on the seven items belonging to each learning style are to be added together to find scores for each of the six-learning style, i.e., ER, EC, FR, FC, VR and VC. Scores of ER and EC are to be added to get the score for enactive learning style (ELS). Scores on FR and FC are to be added to get the score for figural learning style (FLS). Scores on VR and VC are to be added to get the score for verbal learning style (VLS). Scores on ER, FR and VR are to be added to get the score for reproducing learning style (RLS). Scores on EC, FC and VC are to be added to get the score for constructive learning style (CLS).

RELIABILITY:

Alpha reliability of Learning Style Inventory was calculated. Its values for the three learning style names: Enactive, Figural and Verbal are .682, .742 and .903 respectively (N=150).

VALIDITY:

Intrinsic volatility of the Learning Style Inventory was found by finding the product moment correlations among learning styles. Perusal of the table shows that Enactive learning style is positively related to Figural and Verbal learning style and Figural and Verbal learning style are positively related (N=100). All the learning styles are related to one another too.

NORMS:

For the purpose of interpretation of Learning style, scores and conversion of raw score, z-score norms have been prepared and presented from table 8 to table 13. Z-Score norms for learning style - Enactive, Figural and Verbal have been presented in table 8, 9, and 10

respectively. Norms for major learning styles, viz. Reproducing and Constructive have been presented in table 11 and 12 respectively.

SR.	LEARNING STYLES	SR.NO.OF ITEMS IN THE INVENTORY	TOTAL ITEMS
1.	ENACTIVE REPRODUCING(ER)	1,4,7,10,13,16,19	07
2.	ENACTIVE CONSTRUCTIVE(EC)	22,25,28,31,34, 37,40	07
3.	FIGURAL REPRODUCING(FR)	2,5,8,11,14,17,20	07
4.	FIGURAL CONSTRUCTIVE(FC)	23,26,29,32,35,38,41	07
5.	VERBAL REPRODUCING(VR)	3,6,9,12,15,18,21	07
6.	VERBAL CONSTRUCTIVE(VC)	24,27,30,33,36,39,42	07
		TOTAL ITEMS	**42**

ACHIEVEMENT MOTIVATION SCALE BY PROF.PRATIBHA DEO AND DR. ASHA MOHAN

The need to develop the scale was felt, mainly for three reasons. Firstly, a projective test generally used for measuring achievement motivation is time consuming in administration and the scoring procedure is somewhat complicated. Quite often, a researcher or a teacher requires a quick scoring tool which can easily be administered and used for research or for studying pupils. Achievement motivation is a variable or a moderator variable. The purpose in preparing this scale is to provide the researcher with such a tool which will be found to be handy and convenient for administration and scoring. Secondly, many scales and questionnaires that are available, measure achievement motivation in particular fields. Thirdly, for validating the

projective test of achievement motivation, the verbal scale will be found to be a very useful and valuable instrument. This scale covers three areas i.e. academic factors, factors of general field, and social interests. It contains 50 items.

ACADEMIC FACTORS

Academic factors include academic motivation, need achievement, academic challenge, achievement anxiety, importance of grades or marks, meaningfulness of school/college tasks, relevance of school/college to student's future, attitude towards education, work methods, attitude towards peers, warmth of interpersonal relations, college concern for the individual, and implementation of educational objectives.

FACTORS OF GENERAL FIELD OF INTEREST: competition in co-curricular and curricular activities like: sports and athletics, fine arts and dramatics, dancing, music, painting, debates and orations, mountaineering or hill climbing or hiking, cross-country races, sports, domestic crafts for girls like cooking, embroidery, etc., reading and writing, and experimentation or any act of creation.

Social interests include activities such as organizing and participating in social activities, arranging exhibitions, social functions etc.

Item analysis

For item analysis and item discrimination values, Johnson's U.L.I. Method was applied, taking 27% upper and 27% lower achievers out of a group of 46 boys and girls. A slightly modified version of the same technique was applied to obtain items-indices on the basis of highest limits of the scale. Accordingly, the sum total of the two highest weights of the scale 4 and 3 was taken and analysis was done with the same formula. Values obtained by both these methods

were subjected to correlation to see the consistency of the two methods. The correlation coefficient obtained was .92 which was highly significant.

Selection of the items

Out of these 115 items, those which yielded negative or zero values were rejected outright. Rest of the items were selected on the basis of high correspondence between the item indices obtained through two above methods and secondly on the basis of content, so that each factor should be represented in the scale, at least by 2 or 3 items. Finally, 50 items were chosen after careful scrutiny having the distribution as follows:

Sr. No.	Factor	No. of Items
1.	ACADEMIC MOTIVATION	4
2.	NEED FOR ACHIEVEMENT	4
3.	ACADEMIC CHALLENGE	4
4.	ACHIEVEMENT ANXIETY	1
5.	IMPORTANCE OF GRADE AND MARKS	2
6.	MEANINGFULNESS OF TASK	4
7.	RELEVANCE OF SCHOOL/COLLEGE TO FUTURE GOALS	2
8.	ATTITUDE TOWARDS EDUCATION	4
9.	WORK METHODS	5
10.	ATTITUDE TOWARDS TEACHERS	3
11.	INTERPERSONAL RELATIONS	4
12.	INDIVIDUAL CONCERN	2
13.	GENERAL INTERESTS	4
14.	DRAMATICS	2
15.	SORTS ETC.	5
	TOTAL	50

FINAL FORM OF THE SCALE

After item analysis, some changes were made in the scale. Firstly, the questions were changed to statements form to avoid the feeling of irritation and monotony to the respondents. Secondly, the Hindi version of the scale was also prepared for the convenience of the respondents. In the final scale, out of 50 items, 13 are negative and 37 are positive items.

RELIABILITY OF THE SCALE

Test –retest method was applied to obtain the reliability coefficient of the scale. Taking different sets of samples; administration of the scale was repeated on several occasions. The results are given below:

SAMPLE	N	INTERVAL	r	LEVEL OF SIGNIFICANCE
Mixed Group	51	4 weeks	.69	.01
Males	33	5-6 weeks	.67	.01
Females	50	5-6 weeks	.78	.01

VALIDITY OF SCALE

As far as the validity of the scale is concerned, in the first instance the item validity established by the high-low discrimination method was accepted as the validity of the whole measure. Besides, this scale was also used for validating the projective test of Achievement Motivation. The coefficient of correlation between the scale and the projective test was observed to be .54 which speaks for the validity of the scale also, the validity being of the concurrent nature. Finally, the scale scores were also correlated with the scores obtained by administering the Aberdeen Academic Motivation Inventory of Entwistle, 1968 yielding a coefficient of correlation as .75 for a mixed sample of .93. This correlation is high enough to establish the validity of the scale. Regarding the r of .54 between the scale and the projective test, McClelland, 1958 explains that self-descriptive and projective measures are usually not correlating high with each other. Even Carney, 1966 observed that questionnaire measures correlated poorly with McClelland's projective measures. These explanations support the results of the present scale of achievement motivation to be sufficiently valid for use for measuring achievement motivation.

SCORING

One stencil key is to be used for scoring, positive and negative items. A positive item carries the weights of 4, 3, 2, 1 and 0 for the categories of Always, Frequently, Sometimes, Rarely and Never respectively. The negative item is to be scored 0, 1, 2, 3 and 4 for the same categories respectively that are given above. Separate keys for positive and negative items are provided. The total score is the summation of all the positive and negative items scores. The minimum score obtained can be 0 (Zero) and the maximum score can be 200, other scores ranging in between these limits. This is a quick scoring self-administered scale which is also quick in administration as well as scoring.

STATEMENT	ALWAYS	FREQUENTY	SOMETIMES	RARELY	NEVER
POSITIVE	4	3	2	1	0
NEGATIVE	0	1	2	3	4

RESPONSE	ITEM WISE SR. NO.	TOTAL
POSITIVE	2,3,4,5,6,7,10,11,15,16,23,24,25,26,27,28,29,30,31,33,35,36 38,39,40,41,42,43,44,45,46,47,48,49,50	35
NEGATIVE	1,8,9,12,13,14,17,18,19,20,21,22,32,34,37	15
	TOTAL	50

NORMS AND INTERPRETATION OF THE OBTAINED RAW SCORES

The scores theoretically range between 0 to 200. And an obtained Score for any person will be in between these two limits. This obtained score shall be the raw score, and for the interpretation of Raw Scores, z- Score Norms have been presented. The z-Score Norms have been prepared age –wise 13, 14, 15, 16, 17 and 18 and for 19 years and more, since the sample population was very small, therefore z-Score Norms on the basis of Mean and Standard Deviation of the total sample of 635 have been prepared and these have been presented from

Table and in the Table Norms for interpretation of the z-Scores for level of Achievement Motivation have been presented.

STATISTICAL TECHNIQUES AND ADMINISTRATION OF TESTS

The quantitative data was collected through the administration of tools for selected samples from the population. Collected data required to be organized, tabulated, analysed and interpreted for depiction of accurate and correct conclusion and valid generalization. Analysis of data is the process of studying the organized data in order to determine unknown facts. Analysis requires attentiveness, flexibility, accuracy, a scientific attitude and open-mindedness. It is important to prepare a plan of analysis before the actual collection of data. For analyses of the data; Good, Barrand Scates suggested four helpful modes:

- To use significant tables that the data permit.
- To examine carefully the statement of the problem and review of related literature and to study the original records of the data.
- To get away from the problem statement or actually discuss with others to have their viewpoint.
- To check the data by making different statistical calculations.

Statistical techniques have to be selected by keeping in mind the type of data collected. It contributed significantly in gathering, organizing, analysing and interpreting numerical data. After the collection of data, following statistical techniques were used to analyse the data:

- Descriptive Statistics such as Mean, Standard Deviation were calculated to describe the nature of data.
- ‘t’ test was used to compare the different groups under consideration.

- Karl Pearson's Product Moment Correlation was used to see the relationships between variables under study.
- The following levels were established for comparison:
- 0.05 level
- 0.01 level

(A) Mean: The mean is the average of the numbers or a calculated "central" value of a set of numbers. It is the most popular and widely used measure of representing the entire handling data by one value. Its value is obtained by adding together all the items and by dividing this total by the number of items.

Formula of Mean:

$$\mathbf{M = A + \sum f x' X i/N}$$

Where,

A= Assumed Mean

i= Class interval

f= Respective frequency of the mid-values of the class intervals

N= Total frequency

$x' = X - A$

(B) Standard Deviation: The standard deviation measures the absolute dispersion for a variety of distributions. The greater the amount of dispersion or variability, the greater the standard deviation. The greeter will be the magnitude of the deviation's degree of uniformity of the observation as well as homogeneity of a series. Large standard deviation means just the opposite.

Formula of standard deviation:

SD= √∑(X-M) 2/√ N

Where,

X= individual score

M= mean of given set of scores

N= total number of scores

(C) Pearson's Coefficient of Correlation:

Pearson's correlation or Pearson correlation is a correlation coefficient commonly used in linear regression. The Pearson coefficient of correlation is denoted by the symbol 'r'. It is one of the very few symbols that are used universally for describing the degree of correlation between the two series. It is a measure of the linear correlation between two variables X and Y, giving a value between +1 and −1 inclusive, where 1 is total positive correlation, 0 is no correlation, and −1 is a total negative correlation. The following formula is used to calculate the Pearson correlation:

r= N∑XY- ∑X ∑Y/√ [N∑X2– (∑X) 2] [N∑Y2– (∑Y) 2]

Where

r = Pearson r correlation coefficient

N = number of value in each data set

∑x y = sum of the products of paired scores

∑x = sum of x scores

∑y = sum of y scores

∑x2= sum of squared x scores

∑y2= sum of squared y scores

(D) t-test:

To measure the significance of difference between the scores of both the groups, 't'- test has been used. The following formula has been used.

$$t = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

where

x_1 is the mean of first data set

x_2 is the mean of first data set

S_1^2 is the standard deviation of first data set

S_2^2 is the standard deviation of first data set

N_1 is the number of elements in the first data set

N_2 is the number of elements in the first data set

CHAPTER IV

DATA PRESENTATION, RESULT AND DISCUSSION

For Objective 1 Following Hypothesis have been formulated

1.1 There is no significant relationship between Academic Achievement and learning styleof senior secondary school students.

Table 4.1.1 Relationship between Academic Achievement and learning style of senior secondary school students.

Senior Secondary School Students	N	Mean	Sd	r
Academic Achievement	300	69.59	8.26	.79
Learning Style	300	157.40	13.21	

Discussion: Table shows that the mean values of scores of Academic Achievement and Learning Style of Senior Secondary School Students are 69.59 and 157.40 respectively with Sd value of 8.26 and 13.21 respectively. 'r' value is .79 which shows significant strong positive relationship as 'r' value is closer to +1 it means that Academic Achievement and Learning Styles are positively correlated. It can be said that if there is improvement in Learning Styles of the students then Academic Achievement of them will also improve.

It means that there is a positive significant relationship between Academic Achievement and Learning Styles of senior secondary school students. Thus Hypothesis 1.1 is rejected.

1.2 There is no significant relationship between Academic Achievement and learning style of government senior secondary school students

Table 4.1.2 Relationship between Academic Achievement and learning style of government senior secondary school students

Students of Government School	N	Mean	Sd	r
Academic Achievement	100	66.59	7.85	.74
Learning Style	100	156.39	16.38	

Discussion: Table shows that the mean values of Academic Achievement and Learning Style of Government School students are 66.59 and 156.39 respectively with Sd value of 7.85 and 16.38 respectively. 'r' value is .74 which shows a significant strong positive relationship as the 'r' value is closer to +1. Thus hypothesis 1.2 is rejected. It means that there is a strong positive relationship between Academic Achievement and Learning Style of Students of Government School.

1.3 There is no significant relationship between Academic Achievement and learning styleof aided senior secondary school students.

Table 4.1.3 Relationship between Academic Achievement and learning style of aided senior secondary school students

Students of Aided School	N	Mean	Sd	r
Academic Achievement	100	69.82	8.80	.68
Learning Style	100	157.58	11.38	

Discussion: Table shows that the mean values of Academic Achievement and Learning Style of Aided School students are 69.82 and 157.58 respectively with Sd value of 8.80 and 11.38 respectively. 'r' value is .68 which shows a significant strong positive relationship as 'r' value is closer to +1. Thus hypothesis 1.3 is rejected. It means that there is a good level of positive relationship between Academic Achievement and Learning Style of Students of Aided School.

1.4 There is no significant relationship between Academic Achievement and learning styleof private senior secondary school students.

Table 4.1.4 Relationship between Academic Achievement and learning style of private senior secondary school students

Students of Private School	N	Mean	Sd	r
Academic Achievement	100	72.37	7.07	. 31
Learning Style	100	158.23	11.29	

Discussion: Table shows that the mean values of Academic Achievement and Learning Style of Private School students are 72.37. and 158.23 respectively with Sd value of 7.07 and 11.29

respectively. ‘r’ value is .31 which is not significant as this is closer to 0. Thus hypothesis 1.4 is accepted. It means that there is a positive but not enough effective relationship between Academic Achievement and Learning Style of Students of Private School.

For Objective 2 Following Hypothesis have been formulated

2.1There is no significant difference in academic achievement of government and aided school students at senior secondary level.

Table 4.2.1 Academic achievement of government and aided school students at senior secondary level

Academic Achievement	N	Mean	Sd	t
Students of Government School	100	66.59	7.85	1.21
Students of Aided School	100	69.82	8.80	

Discussion: Table shows that the mean values of Academic Achievement of Government and Aided School students are 66.59 and 69.82 respectively with Sd value of 7.85 and 8.80 respectively. ‘t’ value is 1.21 which is not significant at the .05 level. Thus hypothesis 2.1 is accepted. It means that there is no significant difference in Academic Achievement of Government and Aided School students.

2.2 There is no significant difference in academic achievement of government and Private school students at senior secondary level.

Table 4.2.2 Academic achievement of government and Private school students at senior secondary level.

Academic Achievement	N	Mean	Sd	t
Students of Government School	100	66.59	7.85	2.31
Students of Private School	100	72.37	7.07	

Discussion: Table shows that the mean values of Academic Achievement of Government and Private School students are 66.59 and 72.37 respectively with Sd value of 7.85 and 7.07 respectively. 't' value is 2.31 which is significant at the .05 level. Thus hypothesis 2.2 is rejected. It means that there is a significant difference in Academic Achievement of Government and private School students.

2.3 There is no significant difference in academic achievement of aided and private school students at senior secondary level.

Table 4.2.3 Academic achievement of aided and private school students at senior secondary level

Academic Achievement	N	Mean	Sd	t
Students of Aided School	100	69.82	8.80	1.97
Students of Private School	100	72.37	7.07	

Discussion: Table shows that the mean values of Academic Achievement of Aided and Private School students are 69.82 and 72.07 respectively with Sd value of 8.80 and 7.07 respectively. 't' value is 1.97 which is significant at the .05 level. Thus hypothesis 2.3 is rejected. It means that there is a significant difference in Academic Achievement of Aided and Private School students.

For Objective 3 Following Hypothesis have been formulated

3.1 There is no significant difference in academic achievement of male students of government, and aided schools at senior secondary level.

Table 4.3.1 Academic achievement of male students of government, and aided schools at senior secondary level

Academic Achievement	N	Mean	Sd	t
Male Students of Government School	50	65.78	8.64	.197
Male Students of Aided School	50	67.92	9.28	

Discussion: Table shows that the mean values of Academic Achievement of Male Students of Government and Aided School are 65.78 and 67.92 respectively with Sd value of 8.64 and 9.28 respectively. 't' value is .197 which is not significant at .05 level. Thus hypothesis 3.1 is accepted. It means that there is no significant difference in Academic Achievement of Male students of Government and Aided School.

3.2There is no significant difference in academic achievement of male students of Government, and Private school at senior secondary level.

Table 4.3.2 Academic achievement of male students of Government, and Private school at senior secondary level

Academic Achievement	N	Mean	Sd	t
Male Students of Government School	50	65.78	8.64	2.03
Male Students of Private School	50	71.66	6.94	

Discussion: Table shows that the mean values of Academic Achievement of Male Students of Government and Private School are 65.78 and 71.66 respectively with Sd value of 8.64 and 6.94 respectively. 't' value is 2.03 which is significant at the .05 level. Thus hypothesis 3.2 is rejected. It means that there is a significant difference in Academic Achievement of Male Students of Government and Private School.

3.3 There is no significant difference in academic achievement of male students of Aided, and Private school at senior secondary level.

Table 4.3.3 Academic achievement of male students of Aided, and Private school at senior secondary level

Academic Achievement	N	Mean	Sd	t
Male Students of Aided School	50	67.92	9.28	.168
Male Students of Private School	50	71.66	6.94	

Discussion: Table shows that the mean values of Academic Achievement of male students of Aided and Private School are 67.92 and 71.66 respectively with Sd value of 9.28 and 6.94 respectively. 't' value is .168 which is not significant at .05 level. Thus hypothesis 3.3 is accepted. It means that there is no significant difference in Academic Achievement of Male Students of Aided and Private School.

For Objective 4 Following Hypothesis have been formulated

4.1 There is no significant difference in academic achievement of female students of government, and aided schools at senior secondary level.

Table 4.4.1 Academic achievement of female students of government, and aided schools at senior secondary level

Academic Achievement	N	Mean	Sd	t
Female Students of Government School	50	67.40	6.96	.136
Female Students of Aided School	50	71.72	7.94	

Discussion: Table shows that the mean values of Academic Achievement of Female Students of Government and Aided School are 67.40 and 71.72 respectively with Sd value of 6.96 and 7.94 respectively. 't' value is .136 which is not significant at .05 level. Thus hypothesis 4.1 is accepted. It means that there is no significant difference in Academic Achievement of female students of Government and Aided School.

4.2 There is no significant difference in academic achievement of female students of Government and Private school at senior secondary level.

Table 4.4.2 Academic achievement of female students of Government and Private school at senior secondary level

Academic Achievement	N	Mean	Sd	t
Female Students of Government School	50	67.40	6.96	2.01
Female Students of Private School	50	73.08	7.21	

Discussion: Table shows that the mean values of Academic Achievement of Female Students of Government and Private School are 67.40 and 73.08 respectively with Sd value of 6.96 and 7.21. 't' value is 2.01 which is significant at the .05 level. Thus hypothesis 4.2 is rejected. It means that there is a significant difference in Academic Achievement of Female Students of Government and Private School.

4.3 There is no significant difference in academic achievement of female students of Aidedand Private school at senior secondary level.

Table 4.4.3 Academic achievement of female students of Aided and Private school at senior secondary level.

Academic Achievement	N	Mean	Sd	t
Female Students of Aided School	50	71.72	7.94	.40
Female Students of Private School	50	73.08	7.21	

Discussion: Table shows that the mean values of Academic Achievement of Female students of Aided and Private School are 71.72 and 73.08 respectively with Sd value of 7.94 and 7.21 respectively. 't' value is .40 which is not significant at .05 level. Thus hypothesis 4.3 is accepted. It means that there is no difference in Academic Achievement of Female Students of Aided and Private School.

For Objective 5 Following Hypothesis have been formulated

5.1There is no significant relationship between Academic Achievement and enactive learningstyle of senior secondary school students

Table 4.5.1 Academic Achievement and enactive learning style of senior secondary school students

Students of Senior Secondary School	N	Mean	Sd	R
Academic Achievement	300	69.59	8.26	.12
Enactive Learning Style	300	51.41	8.68	

Discussion: Table shows that the mean values of Academic Achievement and Enactive Learning Style of Senior Secondary School Students are 69.59. and 51.41 respectively with Sd value of 8.26 and 8.68 respectively. 'r' value is .12 which is not significant as it is quite close to 0. Thus hypothesis 5.1 is accepted. It means that there is a positive but not effective relationship between Academic Achievement and Enactive Learning Style of Students of Senior Secondary School.

5.2 There is no significant relationship between Academic Achievement and enactive learningstyle of government senior secondary school students

Table 4.5.2 Academic Achievement and enactive learning style of government senior secondary school students

Students of Government School	N	Mean	Sd	r
Academic Achievement	100	66.59	7.85	.19
Enactive Learning Style	100	51.46	8.68	

Discussion: Table shows that the mean values of Academic Achievement and Enactive Learning Style of Government School Students are 66.59 and 51.46 respectively with Sd value of 7.85 and 8.68 respectively. 'r' value is .19 which is not significant as the 'r' value is closer to 0. Thus hypothesis 5.2 is accepted. It means that there is a positive but negligible relationship between Academic Achievement and Enactive Learning Style of Students of Government School.

5.3 There is no significant relationship between Academic Achievement and enactive learning style of aided senior secondary school students

Table 4.5.3 Academic Achievement and enactive learning style of aided senior secondary school students

Students of Aided School	N	Mean	Sd	r
Academic Achievement	100	69.82	8.80	.73
Enactive Learning Style	100	50.55	7.94	

Discussion: Table shows that the mean values of Academic Achievement and Enactive Learning Style of students of Aided School are 69.82 and 50.55 respectively with Sd value of 8.80 and 7.94 respectively. 'r' value is .73 which shows a significant strong positive relationship as the 'r' value is closer to +1. Thus hypothesis 5.3 is rejected. It means that there is a strong positive relationship between Academic Achievement and Enactive Learning Style of Students of Aided School.

5.4 There is no significant relationship between Academic Achievement and enactive learning style of private senior secondary school students

Table 4.5.4 Academic Achievement and enactive learning style of private senior secondary school students

Students of Private School	N	Mean	Sd	r
Academic Achievement	100	72.37	7.07	.11
Enactive Learning Style	100	52.24	7.62	

Discussion: Table shows that the mean values of Academic Achievement and Enactive Learning Style of Students of Private School are 72.37 and 52.24 respectively with Sd value of 7.07 and 7.62 respectively. 'r' value is.11 which is not significant as it is quite close to 0. Thus hypothesis 5.4 is accepted. It means that there is a positive but very negligible relationship between Academic Achievement and Enactive Learning Style of Students of Private School.

For Objective 6 Following Hypothesis have been formulated

6.1 There is no significant relationship between Academic Achievement and figural learning style of senior secondary school students

Table 4.6.1 Academic Achievement and figural learning style of senior secondary school students

Students of Senior Secondary School	N	Mean	Sd	r
Academic Achievement	300	69.59	8.26	.83
Figural Learning Style	300	52.29	8.34	

Discussion: Table shows that the mean values of Academic Achievement and Figural Learning Style of Students of Government School are 69.59 and 52.29 respectively with Sd value of 8.26 and 8.34 respectively. 'r' value is .83 which shows a significant strong positive relationship as 'r' value is closer to +1. Thus hypothesis 6.1 is rejected. It means that there is a strong positive relationship between Academic Achievement and Figural Learning Style of Students of SeniorSecondary School.

6.2 There is no significant relationship between Academic Achievement and figural learning style of government senior secondary school students

Table 4.6.2 Academic Achievement and figural learning style of government senior secondary school students

Students of Government School	N	Mean	Sd	r
Academic Achievement	100	66.59	7.85	.79
Figural Learning Style	100	51.10	8.34	

Discussion: Table shows that the mean values of Academic Achievement and Figural Learning Style of Students of Government School are 66.59 and 51.10 respectively with Sd value of 7.85 and 8.34 respectively. 'r' value is .79 which shows a significant strong positive relationship as the 'r' value is closer to +1. Thus hypothesis 6.2 is rejected. It means that there is a strong positive relationship between Academic Achievement and Figural Learning Style of Students of Government School.

6.3 There is no significant relationship between Academic Achievement and figural learning style of aided senior secondary school students

Table 4.6.3 Academic Achievement and figural learning style of aided senior secondary school students

Students of Aided School	N	Mean	Sd	r
Academic Achievement	100	69.82	8.80	.66
Figural Learning Style	100	53.50	6.44	

Discussion: Table shows that the mean values of Academic Achievement and Figural Learning Style of Students of Aided School are 69.82 and 53.50 respectively with Sd value of 8.80 and 6.44 respectively. 'r' value is .66 which shows a significant strong positive relationship as the 'r' value is closer to +1 value. Thus hypothesis 6.3 is rejected. It means that there is a strong positive relationship between Academic Achievement and Figural Learning Style of Students of Aided School.

6.4 There is no significant relationship between Academic Achievement and figural learning style of private senior secondary school students

Table 4.6.4 Academic Achievement and figural learning style of private senior secondary school students

Students of Private School	N	Mean	Sd	r
Academic Achievement	100	72.37	7.07	.81
Figural Learning Style	100	52.28	7.11	

Discussion: Table shows that the mean values of Academic Achievement and figural Learning Style of Students of Private School are 72.37 and 52.28 respectively with Sd value of 7.07 and 7.11 respectively. 'r' value is .81 which shows a positive significant relationship as the 'r' value is closer to1. Thus hypothesis 6.4 is rejected. It means that there is a very strong significant relationship between Academic Achievement and Figural Learning Style of Students of Private School.

For Objective 7 Following Hypothesis have been formulated

7.1 There is no significant relationship between Academic Achievement and verbal learning style of senior secondary school students

Table4.7.1 Academic Achievement and verbal learning style of senior secondary school students

Students of Senior Secondary School	N	Mean	Sd	r
Academic Achievement	300	69.59	8.26	.61
Verbal Learning Style	300	53.69	8.55	

Discussion: Table shows that the mean values of Academic Achievement and Verbal Learning Style of Students of Government School are 66.59 and 53.83 respectively with Sd value of 7.85 and 8.55 respectively. 'r' value is .61 which shows a positive significant relationship as 'r' value is closer to +1. Thus hypothesis 7.1 is rejected. It means that there is a positive relationship between Academic Achievement and Verbal Learning Style of Students of Senior Secondary School.

7.2 There is no significant relationship between Academic Achievement and verbal learning style of government senior secondary school students

Table 4.7.2 Academic Achievement and verbal learning style of government senior secondary school students

Students of Government School	N	Mean	Sd	r
Academic Achievement	100	66.59	7.85	.63
Verbal Learning Style	100	53.83	8.55	

Discussion: Table shows that the mean values of Academic Achievement and Verbal Learning Style of Students of Government School are 66.59 and 53.83 respectively with Sd value of 7.85 and 8.55 respectively. 'r' value is .63 which shows a strong significant positive relationship as 'r' value is closer to +1. Thus hypothesis 7.2 is rejected. It means that there is a strong positive relationship between Academic Achievement and Verbal Learning Style of Students of Government School.

7.2 There is no significant relationship between Academic Achievement and verbal learning style of aided senior secondary school students

Table 4.7.3 Academic Achievement and verbal learning style of aided senior secondary school students

Students of Aided School	N	Mean	Sd	r
Academic Achievement	100	69.82	8.80	.78
Verbal Learning Style	100	53.53	8.27	

Discussion: Table shows that the mean values of Academic Achievement and Verbal Learning Style of Students of Aided School are 69.82 and 53.53 respectively with Sd value of 8.80 and 8.27 respectively. 'r' value is.78 which shows a significant strong positive relationship as the 'r' value is closer to +1. Thus hypothesis 7.3 is rejected. It means that there is a strong positive relationship between Academic Achievement and Verbal Learning Style of Students of Aided School.

7.4 There is no significant relationship between Academic Achievement and verbal learning style of private senior secondary school students

Table 4.7.4 Academic Achievement and verbal learning style of private senior secondary school students

Students of Private School	N	Mean	Sd	r
Academic Achievement	100	72.37	7.07	.73
Verbal Learning Style	100	53.71	7.59	

Discussion: Table shows that the mean values of Academic Achievement and Verbal Learning Style of Students of Private School are 72.37 and 53.71 respectively with Sd value of 7.07 and 7.59 respectively. 'r' value is .73 which shows a significant strong positive relationship as the 'r' value is closer to +1. Thus hypothesis 7.4 is rejected. It means that there is a strong positive relationship between Academic Achievement and Verbal Learning Style of Students of Private School.

For Objective 8 Following Hypothesis have been formulated

8.1There is no significant difference in learning style of government and aided schoolstudents at senior secondary level.

Table 4.8.1 Learning style of government and aided school students at senior secondary level.

Learning Style	N	Mean	Sd	t
Students of Government School	100	156.39	16.38	.538
Students of Aided School	100	157.58	11.38	

Discussion: Table shows that the mean values of Learning Style of Government and Aided School students are 156.39 and 157.58 respectively with Sd value of 16.38 and 11.38 respectively. 't' value is .538 which is not significant at .05 level. Thus hypothesis 8.1 is accepted. It means that there is no significant difference in learning styles of Government and Aided School students.

8.2 There is no significant difference in learning style of government and private schoolstudents at senior secondary level.

Table 4.8.2 Learning style of government and private school students at senior secondary level.

Learning Style	N	Mean	Sd	t
Students of Government School	100	156.39	16.38	1.99
Students of Private School	100	158.23	11.29	

Discussion: Table shows that the mean values of Learning Style of Government and Private School students are 156.39 and 158.23 respectively with Sd value of 16.38 and 11.29 respectively. 't' value is 1.99 which is significant at .05 level. Thus hypothesis 8.2 is rejected. It means that there is a difference in Learning styles of Government and private School students.

8.3 There is no significant difference in learning style of aided and private school studentsat senior secondary level.

Table 4.8.3 Learning style of aided and private school students at senior secondary level.

Learning Style	N	Mean	Sd	t
Students of Aided School	100	157.58	11.38	2.38
Students of Private School	100	158.23	11.29	

Discussion: Table shows that the mean values of Learning Style of Aided and Private School students are 157.58 and 158.23 respectively with Sd value of 11.38 and 11.29 respectively. 't' value is 2.38 which is significant at the .05 level. Thus hypothesis 8.3 is rejected. It means that there is a difference in Learning styles of Aided and Private School students.

For Objective 9 Following Hypothesis have been formulated

9.1 There is no significant difference in learning style of male students of government and aided school at senior secondary level.

Table 4.9.1 Learning style of male students of government and aided school at senior secondary level.

Learning Style	N	Mean	Sd	t
Male Students of Government School	50	156.04	19.40	.618
Male Students of Aided School	50	157.50	12.93	

Discussion: Table shows that the mean values of Learning Style of Male Students of Government and Aided School are 156.04 and 157.50 respectively with Sd value of 19.40 and 12.93 respectively. 't' value is .618 which is not significant at .05 level. Thus hypothesis 9.1 is accepted. It means that there is no difference in Learning Style of Male students of Government and Aided schools.

9.2 There is no significant difference in learning style of male students of government andprivate school at senior secondary level.

Table 4.9.2 Learning style of male students of government and private school at senior secondary level.

Learning Style	N	Mean	Sd	t
Male Students of Government School	50	156.04	19.40	1.39
Male Students of Private School	50	160.16	18.77	

Discussion: Table shows that the mean values of Learning Style of Male Students of Government and Private School are 156.04 and 160.16 respectively with Sd value of 19.40 and 18.77 respectively. 't' value is 1.39 which is not significant at the .05 level. Thus hypothesis 9.2 is accepted. It means that there is no significant difference in learning styles of Male Students of Government and Private School.

9.3 There is no significant difference in learning style of male students of aided and privateschool at senior secondary level.

Table 4.9.3 Learning style of male students of aided and private school at senior secondary level.

Learning Style	N	Mean	Sd	t
Male Students of Aided School	50	157.50	12.93	2.58
Male Students of Private School	50	160.16	18.77	

Discussion: Table shows that the mean values of Learning Style of male students of Aided and Private School are 157.50 and 160.16 respectively with Sd value of 12.93 and 18.77 respectively. 't' value is 2.58 which is significant at .01 level. Thus hypothesis 9.3 is rejected. It means that there is a difference in learning styles of Male Students of Aided and Private School.

For Objective 10 Following Hypothesis have been formulated

10.1 There is no significant difference in learning style of female students of government and aided schools at senior secondary level.

Table 4.10.1 Learning style of female students of government and aided schools at senior secondary level.

Learning Style	N	Mean	Sd	t
Female Students of Government School	50	156.74	12.61	.711
Female Students of Aided School	50	157.66	9.63	

Discussion: Table shows that the mean values of Learning Style of Female Students of Government and Aided School are 156.74 and 157.66 respectively with Sd value of 12.61 and 9.63 respectively. 't' value is .711 which is not significant at .05 level. Thus hypothesis 10.1 is accepted. It means that there is no difference in Learning styles of Female students of Government and Aided schools.

10.2 There is no significant difference in learning style of female students of government and private school at senior secondary level.

Table 4.10.2 Learning style of female students of government and private school at senior secondary level.

Learning Style	N	Mean	Sd	t
Female Students of Government School	50	156.74	12.61	.871
Female Students of Private School	50	156.30	13.15	

Discussion: Table shows that the mean values of Learning Style of Female Students of Government and Private School are 156.74 and 156.30 respectively with Sd value of 12.61 and 13.15 respectively. 't' value is .871 which is not significant at .05 level. Thus hypothesis 10.2 is accepted. It means that there is no difference in learning styles of Female Students of Government and Private schools.

10.3 There is no significant difference in learning style of female students of aided and private schools at senior secondary level.

Table 4.10.3 Learning style of female students of aided and private schools at senior secondary level.

Learning Style	N	Mean	Sd	t
Female Students of Aided School	50	157.66	9.63	1.07
Female Students of Private School	50	156.30	13.15	

Discussion: Table shows that the mean values of Learning Style of Female students of Aided and Private School are 157.66 and 156.30 respectively with Sd value of 9.63 and 13.15 respectively. 't' value is 1.07 which is not significant at the .05 level. Thus hypothesis 10.3 is accepted. It means that there is no significant difference in learning styles of Female Students of Aided and Private School.

For Objective 11 Following Hypothesis have been formulated

11.1There is no significant relationship between Academic Achievement and Achievement motivation of senior secondary school students.

Table 4.11.1 Academic Achievement and Achievement motivation of senior secondary school students

Students of Senior Secondary School	N	Mean	Sd	r
Academic Achievement	300	69.59	8.26	.81
Achievement Motivation	300	154.05	34.90	

Discussion: Table shows that the mean values of Academic Achievement and Achievement Motivation of students of Senior Secondary Schools are 69.59 and 154.05 respectively with Sd value of 8.26 and 34.90 respectively. 'r' value is .81 which shows a significant strong positive relationship as 'r' value is closer to +1. Thus hypothesis 11.1 is rejected. It means that there is a very strong relationship between Academic Achievement and Achievement Motivation of Students of Senior Secondary Schools.

11.2There is no significant relationship between Academic Achievement and Achievementmotivation of government senior secondary school students.

Table 4.11.2 Academic Achievement and Achievement motivation of government senior secondary school students.

Students of Government School	N	Mean	Sd	r
Academic Achievement	100	66.59	7.85	.69
Achievement Motivation	100	150.33	36.79	

Discussion: Table shows that the mean values of Academic Achievement and Achievement Motivation of students of Government School are 66.59 and 150.33 respectively with Sd value of 7.85 and 36.79 respectively. 'r' value is .69 which shows a significant strong positive relationship as 'r' value is closer to +1. Thus hypothesis 11.2 is rejected. It means that there is a strong positive relationship between Academic Achievement and Achievement Motivation of Students of Government Schools.

11.3There is no significant relationship between Academic Achievement and Achievementmotivation of aided senior secondary school students.

Table 4.11.3 Academic Achievement and Achievement motivation of aided senior secondary school students

Students of Aided School	N	Mean	Sd	r
Academic Achievement	100	69.82	8.80	.72
Achievement Motivation	100	155.29	34.58	

Discussion: Table shows that the mean values of Academic Achievement and Achievement Motivation of students of Aided School are 69.82 and 155.29 respectively with Sd value of 8.80 and 34.58 respectively. 't' value is .72 which shows a significant strong positive relationship as the 'r' value is closer to +1. Thus hypothesis 11.3 is rejected. It means that there is a strong positive relationship between Academic Achievement and Achievement Motivation of Students of Aided School.

11.4 There is no significant relationship between Academic Achievement and Achievement motivation of private senior secondary school students.

Table 4.11.4 Academic Achievement and Achievement motivation of private senior secondary school students

Students of Private School	N	Mean	Sd	r
Academic Achievement	100	72.37	7.07	.76
Achievement Motivation	100	156.55	33.26	

Discussion: Table shows that the mean values of Academic Achievement and Achievement Motivation of students of Private School are 72.37 and 156.55 respectively with Sd value of 7.07 and 33.26 respectively. 'r' value is .76 which shows a significant strong positive relationship as the 'r' value is closer to +1. Thus hypothesis 11.4 is rejected. It means that there is a strong positive relationship between Academic Achievement and Achievement Motivation of Students of Private School.

For Objective 12 Following Hypothesis have been formulated

12.1 There is no significant difference in achievement motivation of government and aided school students at senior secondary level.

Table 4.12.1 Achievement motivation of government and aided school students at senior secondary level.

Achievement Motivation	N	Mean	Sd	t
Students of Government School	100	150.33	36.79	.36
Students of Aided School	100	155.29	34.58	

Discussion: Table shows that the mean values of Achievement Motivation of Government and Aided School students are 150.33 and 155.29 respectively with Sd value of 36.79 and 34.58respectively. 't' value is .36 which is not significant at .05 level. Thus hypothesis 12.1 is accepted. It means that there is no difference in Achievement Motivation of Government and Aided School students.

12.2There is no significant difference in achievement motivation of government and private school students at senior secondary level.

Table 4.12.2 achievement motivation of government and private school students at senior secondary level.

Achievement Motivation	N	Mean	Sd	t
Students of Government School	100	150.33	36.79	2.12
Students of Private School	100	156.55	33.26	

Discussion: Table shows that the mean values of Achievement Motivation of Government and Private School students are 150.33 and 156.55 respectively with Sd value of 36.79 and 33.26 respectively. 't' value is 2.12 which is significant at the .05 level. Thus hypothesis 12.2 is rejected. It means that there is a significant difference in Achievement Motivation of Government and Private School students.

12.3There is no significant difference in achievement motivation of aided and private school students at senior secondary level.

Table 4.12.3 Achievement motivation of aided and private school students at senior secondary level.

Achievement Motivation	N	Mean	Sd	t
Students of Aided School	100	155.29	34.58	.792
Students of Private School	100	156.55	33.26	

Discussion: Table shows that the mean values of Achievement Motivation of Aided and Private School students are 155.29 and 156.55 respectively with Sd value of 34.58 and 33.26 respectively. 't' value is .792 which is not significant at .05 level. Thus hypothesis 12.3 is accepted. It means that there is no difference in Achievement Motivation of Aided and Private School students.

For Objective 13 Following Hypothesis have been formulated

13.1 There is no significant difference in achievement motivation of male students ofgovernment and aided school at senior secondary level.

Table 4.13.1 Achievement motivation of male students of government and aided school at senior secondary level.

Achievement Motivation	N	Mean	Sd	t
Male Students of Government School	50	145.68	36.66	3.06
Male Students of Aided School	50	154.58	35.05	

Discussion: Table shows that the mean values of Achievement Motivation of Male Students of Government and Aided School are 145.68 and 154.58 respectively with Sd value of 36.66 and 35.05 respectively. 't' value is 3.06 which is significant at .01 level. Thus hypothesis 13.1 is rejected. It means that there is a significant difference in Achievement Motivation of Male students of Government and Aided School.

13.2There is no significant difference in achievement motivation of male students ofgovernment and private school at senior secondary level.

Table 4.13.2 Achievement motivation of male students of government and private school at senior secondary level.

Achievement Motivation	N	Mean	Sd	t
Male Students of Government School	50	145.68	36.66	1.34
Male Students of Private School	50	151.40	34.13	

Discussion: Table shows that the mean values of Achievement Motivation of Male Students of Government and Private School are 145.68 and 151.40 respectively with Sd value of 36.66 and 34.13 respectively. 't' value is 1.34 which is not significant at the .05 level. Thus hypothesis 13.2 is accepted. It means that there is no difference in Achievement Motivation of Male Students of Government and Private School.

13.3There is no significant difference in achievement motivation of male students of aidedand private school at senior secondary level.

Table 4.13.3 Achievement motivation of male students of aided and private school at senior secondary level

Achievement Motivation	N	Mean	Sd	t
Male Students of Aided School	50	154.58	35.05	.775
Male Students of Private School	50	151.40	34.13	

Discussion: Table shows that the mean values of Achievement Motivation of Male Students of Aided and Private School are 154.58 and 151.40 respectively with Sd value of 35.05 and

34.13 respectively. ‘t’ value is .775 which is not significant at .05 level. Thus hypothesis 13.3 is accepted. It means that there is no difference in Achievement Motivation of Male Students of Aided and Private School.

For Objective 14 Following Hypothesis have been formulated

14.1There is no significant difference in achievement motivation of female students of government and aided schools at senior secondary level.

Table 4.14.1 Achievement motivation of female students of government and aided schools at senior secondary level

Achievement Motivation	N	Mean	Sd	t
Female Students of Government School	50	154.98	36.70	.90
Female Students of Aided School	50	156	34.61	

Discussion: Table shows that the mean values of Achievement Motivation of Female Students of Government and Aided School are 154.98 and 156 respectively with Sd value of 36.70 and 34.61 respectively. ‘t’ value is .90 which is not significant at .05 level. Thus hypothesis 14.1 is accepted. It means that there is no difference in Achievement Motivation of Female students of Government and Aided School.

14.2 There is no significant difference in achievement motivation of female students of government and private school at senior secondary level.

Table 4.14.2 Achievement motivation of female students of government and private school at senior secondary level.

Achievement Motivation	N	Mean	Sd	t
Female Students of Government School	50	154.98	36.70	1.98
Female Students of Private School	50	161.70	31.88	

Discussion: Table shows that the mean values of Achievement Motivation of Female Students of Government and Private School are 154.98 and 161.70 respectively with Sd value of 36.70 and 31.88 respectively. 't' value is 1.98 which is significant at the .05 level. Thus hypothesis 14.2 is rejected. It means that there is a significant difference in Achievement Motivation of Female Students of Government and Private School.

14.3There is no significant difference in achievement motivation of female students of aided and private schools at senior secondary level.

Table 4.14.3 Achievement motivation of female students of aided and private schools at senior secondary level.

Achievement Motivation	N	Mean	Sd	t
Female Students of Aided School	50	156	34.61	.451
Female Students of Private School	50	161.70	31.88	

Discussion: Table shows that the mean values of Achievement Motivation of Female students of Aided and Private School are 156 and 161.70 respectively with Sd value of 34.61 and 31.88 respectively. 't' value is .451 which is not significant at .05 level. Thus hypothesis 14.3 is accepted. It means that there is no difference in Achievement Motivation of Female Students of Aided and Private School.

CHAPTER V

FINDINGS, SUGGESTION AND EDUCATIONAL IMPLICATIONS

This chapter deals with the Findings, Suggestions and Educational Implications of the research work carried out.

Findings have been mentioned objective wise and on the basis of findings suggestions for stakeholders have been proposed. These findings also led to some educational implications which are the last section of this chapter.

5.1 Findings:

Objective wise findings of the present study are given here:

Objective

1. To study Academic Achievement in relation to the learning style of senior secondary school students on the basis of the nature of institution.

- There is a significant strong positive relationship between Academic Achievement and Learning Styles of senior secondary school students.
- There is a strong significant positive relationship between Academic Achievement and Learning Style of Students of Government School as ‘r’ value is .74 which is closer to +1.
- There is a strong, positive significant relationship between Academic Achievement and Learning Style of Students of Aided School conclusion supported by ‘r’ value .68 which is significant as it is closer to +1.
- There is a positive but not enough effective relationship between Academic Achievement and Learning Style of Students of Private School. This finding is based on the ‘r’ value which is .31 which is closer to 0.

Objective

2. **To study the academic achievement of government, aided and private school students at senior secondary level.**

- There is no significant difference in Academic Achievement of Government and Aided School students as evidenced by 't' value 1.21 which is not significant at .05 level.
- There is significant difference in Academic Achievement of Government and Private School students as evidenced by 't' value 2.31 which is significant at .05 level.
- There is significant difference in Academic Achievement of Aided and Private School students as evidenced by 't' value 1.97 which is significant at .05 level.

Objective

3. **To study the academic achievement among male students of government, aided and private school students at senior secondary level.**

- There is no significant difference in Academic Achievement of Male students of Government and Aided School evidenced by't' value .197 which is not significant at .05 level.
- There is significant difference in Academic Achievement of Male Students of Government and Private School, supported by't' value 2.03 which is significant at .05 level.
- There is no significant difference in Academic Achievement of Male Students of Aided and Private School as evidenced by't' value .168 which is not significant at .05 level.

Objective

4. **To study the academic achievement among female students of government, aided and private school students at senior secondary level.**

- There is no significant difference in Academic Achievement of female students of Government and Aided School as evidenced by‘t’ value is .136 which is not significant at .05 level.
- There is a significant difference in Academic Achievement of Female Students of Government and Private School as supported by‘t’ value is 2.01 which is significant at .05 level.
- ‘t’ value is .40 which is not significant at .05 level supported that there is no significant difference in Academic Achievement of Female Students of Aided and Private School.

Objective

5. **To study the Academic Achievement in relation to enactive learning style of senior secondary school students on the basis of the nature of the institution.**
    - There is a positive but not effective relation between Academic Achievement and EnactiveLearning Style of Students of Senior Secondary School.
    - There is a positive but not significant relationship between Academic Achievement and Enactive Learning Style of Students of Government School as evidenced by ‘r’ value whichis .19 which is closer to 0.
    - There is a positive strong significant relationship between Academic Achievement and Enactive Learning Style of Students of Aided School as evidenced by ‘r’ value which is 73 which is closer to +1.

- There is a positive but not significant relationship between Academic Achievement and Enactive Learning Style of Students of Private School as evidenced by ‘r’ value which is .11 which is close to 0.

Objective

6. To study the Academic Achievement in relation to the figural learning style of senior secondary school students on the basis of the nature of institution.

- There is a strong positive significant relationship between Academic Achievement and Figural Learning Style of Students of Senior Secondary School as supported by ‘r’ value which is .83 which is close to +1.
- There is a positive strong significant relationship between Academic Achievement and Figural Learning Style of Students of Government School. This finding is supported by ‘r’ value is .79 which is closer to +1.
- There is a strong positive significant relationship between Academic Achievement and Figural Learning Style of Students of Aided School as evidenced by ‘r’ value is .66 which is closer to +1.
- There is a strong positive significant relationship between Academic Achievement and Figural Learning Style of Students of Private School as supported by ‘r’ value is .81 which is closer to +1.

Objective

7. To study the Academic Achievement in relation to the verbal learning style of senior secondary school students on the basis of the nature of institution.

- There is positive strong significant relationship between Academic Achievement and Verbal Learning Style of Students of Senior Secondary School as evidenced by 'r' value .61 which is closer to +1.
- There is positive strong significant relationship between Academic Achievement and Verbal Learning Style of Students of Government School as evidenced by 'r' value .63 which is closer to +1.
- There is a strong significant relationship between Academic Achievement and Verbal Learning Style of Students of Aided School as evidenced by 'r' value .78 which is closer to +1.
- There is a positive strong significant relationship between Academic Achievement and Verbal Learning Style of Students of Private School as evidenced by 'r' value .73.

Objective

8.To study the learning style of government, aided and private school students at senior secondary level.

- There is no significant difference in Learning Style of Government and Aided School students as evidenced by 't' value is .538 which is not significant at .05 level.
- There is a significant difference in Learning Style of Government and private School students as supported by 't' value is 1.99 which is significant at .05 level.
- There is a significant difference in Learning Style of Aided and Private School students, this is supported by 't' value is 2.38 which is significant at .05 level.

Objective

9.To study the learning style among male students of government, aided and private school students at senior secondary level.

- There is no difference in Learning Style of Male students of Government and Aided School as evidenced by 't' value is .618 which is not significant at .05 level.
- There is no significant difference in Learning Style of Male Students of Government and Private School as evidenced by 't' value is 1.39 which is not significant at .05 level.
- There is a significant difference in Learning Style of Male Students of Aided and Private School as evidenced by 't' value is 2.58 which is significant at .01 level.

Objective

10. To study the learning style among female students of government, aided and private school students at senior secondary level.

- There is no difference in Learning Style of Female students of Government and Aided School. This result is based on 't' value is .711 which is not significant at .05 level.
- There is no significant difference in Learning Style of Female Students of Government and Private School 't' value is .871 which is not significant at .05 level.
- There is no significant difference in Learning Style of Female Students of Aided and Private School as evidenced by 't' value is 1.07 which is not significant at .05 level.

Objective

11To study the Academic Achievement in relation to Achievement motivation of senior secondary school students on the basis of the nature of institution.

- There is positive strong significant relationship between Academic Achievement and Achievement Motivation of Students of Senior Secondary Schools this finding is supported by'r' value .81 which is closer to +1

- There is a strong positive significant relationship between Academic Achievement and Achievement Motivation of Students of Government School as evidenced ‘r’ value .69 whichis closer to +1.
- There is a strong positive significant relationship between Academic Achievement and Achievement Motivation of Students of Aided School as ‘r’ value is .72 which is closer to +1. 11.4There is a strong significant positive relationship between Academic Achievement and Achievement Motivation of Students of Private School as supported by ‘r’ value .76 which is closer to +1.

Objective

12To study the achievement motivation of government, aided and private school students at senior secondary level.

- It means that there is no difference in Achievement Motivation of Government and AidedSchool students, this result is based on ‘t’ value is .36 which is not significant at .05 level.
- There is a significant difference in Achievement Motivation of Government and PrivateSchool students supported by ‘t’ value is 2.12 which is significant at .05 level.
- There is no significant difference in Achievement Motivation of Aided and Private Schoolstudents as evidenced by ‘t’ value is .792 which is not significant at .05 level

Objective

13To study the achievement motivation among male students of government, aided and private school students at senior secondary level.

- ‘t’ value is 3.06 which is significant at .01 level, leading to the conclusion that there is significant difference in Achievement Motivation of Male students of Government and AidedSchool.
- There is no significant difference in Achievement Motivation of Male Students of Government and Private School as evidenced by ‘t’ value is 1.34 which is not significant at .05level.
- There is no significant difference in Achievement Motivation of Male Students of Aided and Private School as evidenced by ‘t’ value is .775 which is not significant at .05 level.

Objective

14. To study the achievement motivation among female students of government, aided and private school students at senior secondary level.

- There is no significant difference in Achievement Motivation of Female students of Government and Aided School as evidenced by ‘t’ value is .90 which is not significant at .05 level.
- There is significant difference in Achievement Motivation of Female Students of Government and Private School as supported by‘t’ value is 1.98 which is significant at .05 level.
- There is no significant difference in Achievement Motivation of Female Students of Aidedand Private School as evidenced by ‘t’ value is .451 which is not significant at .05 level.

Conclusion:

On the basis of the findings of all fourteen (14) objectives following conclusion have been extracted from the research work On the basis of r value it was found that Academic Achievement and learning styles are positively correlated.

If we conclude the r value of table 1.1 to 1.3 it was found that Academic Achievement of government senior secondary school students and aided senior secondary school students were positively correlated with learning styles of students but academic achievement of private school students were positively but not effectively related with learning style.

1. On the basis of 't' value score it has been found that there is no significant difference in Academic Achievement of Government and Aided School students.

There has been no significant difference in Academic Achievement of Male students of Government and Aided School students

There has been no significant difference in Academic Achievement of Female students of Government and Aided School students

So, it can be concluded that male and female students of both Government and Aided schools do not differ in Academic Achievement and also all the students of both type of schools do not differ significantly in Academic Achievement.

2. On the basis of 't' value score it has been found that the students of Government andPrivate Schools differ in Academic Achievement.

The difference of Academic Achievement has been also found in male students of both types of schools.

The difference of Academic Achievement has been also found in female students of both types of schools.

So, it can be concluded that students of Government and Private Schools do differ significantly in Academic Achievement. This difference also exists in male and female students.

3. 't' value score helped to reach the conclusion that the students of Aided and Private schoolsdiffer significantly in Academic Achievement.

This difference of Academic Achievement has not been found between male students of boththe schools and female students of both the schools which was analysed with the help of 't' score.

4. On the basis of r value it was concluded that positive but not effective relationship found between Academic achievement and Enactive learning style.

It was also found that positive but negligible relationship between academic achievement and enactive learning style of government secondary school students. Strong positive relationship was found between academic achievement and enactive learning style of aided secondary school students but in private school students' academic achievement were positively but negligible related with learning style.

5. On the basis of r value strong positive relationship was found between academic achievementand figural learning style of senior secondary school students.

Further it was also found that strong relationship between academic achievement and figural learning style among all three schools' government, aided and private.On the basis of r value strong positive relationship was found between academic achievement and verbal learning style of senior secondary school students.

Strong positive relationship was found between academic achievement and verbal learning style of government, aided and private senior secondary school students.

6. No significant difference has been found in the Learning Style of Government and Aided School Students. But a significant difference has been found in the Learning Style of Government and Private School Students; and Aided and Private School Students.

7. No Significant difference has been found in Learning Style of either male students ofGovernment and Aided Schools or female students of Government and Aided School.

Significant differences have been not found in Learning Styles of male students of Governmentand Private School and female students of Government and Private School.

Though no significant difference has been found in the learning style of female students ofAided and Private School, this difference exists in male students of both types of school.

Thus, it can be concluded that Learning styles of Government and Aided school students are quite similar and gender difference also does not exist. Students of Government and Private school: and Aided and Private school differ in learning

styles. Only Male students of Aided and Private school students have shown the difference in Learning Style.

8. On the basis of r value strong positive relationship was found between academic achievement and achievement motivation of senior secondary school students.

'r' value for relationship between Academic Achievement and Achievement Motivation of Students of Government, Aided and Private Schools reflected that for the students of all types of school there is strong significant relation between both Academic Achievement and Achievement Motivation.

9. Students of Government and Aided school; and students of Aided and Private school have shown no difference in Achievement Motivation level. Students of Government and Private school differ in Achievement Motivation level.

Male students of Government and Private school; and Aided and Private school do not differsignificantly in Achievement Motivation level.

Male Students of Government and Aided school differ in Achievement Motivation level. Female students of Government and Private schools differ significantly in AchievementMotivation level.

Female Students of Government and Aided school; and Aided and Private school do not differin Achievement Motivation level.

Thus, it can be concluded that Learning Style is a good predictor of Academic Achievementand almost every type of learning is crucial for good academic achievement.

Suggestions:

Findings of every research work are very useful for proposing important suggestions. These may be for different stakeholders of society i.e., Policy makers in the field of Education, Management body of Schools, Administrative Authority of Schools, Principals and the futureresearchers.

Suggestions for the Policy-makers in Education:

Quality concern is the prime focus of almost every Policy maker and planner. They decide the pathway to make sure that quality education and working environment in institutes remains conducive for the future learners. Policy makers always focus on the learner's learning atmosphere. Learning is generally measured by the academic achievement of the learner. Academic achievement is influenced by many factors. On the basis of the findings and conclusion of this research, policy makers must focus on ensuring requisite level of achievement motivation in the learners so that they can attain good academic achievement.

Besides they should encourage all types of educational institutions such as Government, Aidedor Private to have such an enthusiastic and supportive environment so that a good learning stylecan be developed in the learners. Developing learning content in such a way so that good learning styles become an integral part of the teaching-learning process.

Suggestions for Management of Schools:

Management body of all types of school should also take the findings and conclusion of the study as a guideline to ensure that all students must attain a high level of academic achievement.

Academic achievement is dependent on various factors. A good management must ensure a supportive and helpful teaching –learning environment in their institution. They should also make provision for organizing such activities that are helpful in improving achievement motivation among students.

Management should consider the issues of students with sympathy and empathy. This will helpin keeping students confident and maintain their achievement motivation level.

There should also be proper availability of technology and supportive teaching material so thatlearners' learning style may be developed to the optimum level.

Learning style has been found crucial for academic achievement of the students. That's why itmust be ensured that the student's learning style must be tailored to the needs of the students.

There must be focus on development of all styles of learning viz. Enactive, Figural and Verbal,as all these are suitable for different types of learning of content.

Suggestions for Administrators:

This study could be of importance to administrators of all types of educational institutions. It is at this level the task of execution of the policy is being done. They should not be rigid while dealing with the students. Students are individually different and while executing the policy they must keep this point in their mind. Students must be engaged in the teaching-learning process as an active participant not as a passive learner.

This strategy will help in promoting achievement motivation among the learners. Students must be given proper opportunities and always be rewarded for their work of excellence in every task they are assigned with.

Administrators should be aware of the learning level of the students. This will help them to understand students in a better way. This will also help them to decide how to develop a good learning style in students. They will be able to know in which type of learning style the student is lagging behind and how to promote that kind of learning style in a particular student.

Role of the administrator is very important at the execution level and monitoring of the execution of the various policies. An administrator must be keen to bring desirable changes in the institution for the welfare of students.

Suggestions for Principal:

The principal's job is very crucial in encouraging and maintaining achievement motivation students as they are directly in touch with the learners either in one way or the other. Their relation with students should be cordial and motivating. He/she must

have the ability to handle the issues of the students in a very congenial way. Principals should always encourage students to go for higher levels of academic achievement.

To encourage students to attain good academic achievement, the principal must lead from the front and also encourage teachers to promote those activities that lead to achievement motivation which in turns stimulates students to excel in their work.

Thus, the responsibility of the principal of the institution is very crucial and the outcomes of this study can play a guiding role in getting the best out of the students.

Suggestions for Community:

Community should give the due respect to the individuality of each student. Community should not expect the same level of academic achievement from each and every student. Community should encourage students so that their achievement motivation level may not get lowered in any tough conditions.

Community members should ensure that institutions in their vicinity must have such a nice learning environment so that students may love to remain in the school for better learning. Community members should see how they can contribute to promoting a good learning style among the young students.

It is a duty of each member of the community to promote a good level of motivation among young members (students) of the community so that they may never get discouraged and always be motivated to attain something great in their life.

Suggestions for the further research:

- Researchers may take up studies for schools of different boards.
- Researchers may take up studies for rural and urban schools.
- A detailed study of some other factors of academic achievement of students can be done, which have not been covered in this study.
- Use of more sophisticated statistical techniques may be used for more detailed analysis of the data.
- Present investigation involves students of senior secondary level; it can be done for secondary level/graduate level etc.
- The research can be done involving different cities with a large sample.
- A research work on the same dimension of the study can also be done by comparing any one type of institution of different states.
- A detailed study for the demographic aspect of students and its impact on academic achievement can also be done.
- A tool with detailed norms can be obtained to study the factors affecting academic achievement of the students.

Educational Implications:

- The present study reflects that academic achievement can be ensured by making efforts towards changing the learning styles of the students.

- There is a possibility of improvement in learning styles and achievement motivation level of the students of government schools and aided schools.
- Academic Achievement of students can be improved by providing better support for improving the achievement motivation level of the students.
- Promotion of activities that may lead to development of good Learning Styles and good achievement motivation levels should be the prime focus of management, principal and teachers of each type of school.
- To improve the academic achievement of the students, teachers should be encouraged to innovate and do new things that may encourage the achievement motivation level of the students. Efforts should also be made to develop a good learning style in students.
- To ensure improvement in academic achievement of the students, all the stakeholders must join hands together.
- Those activities should be promoted in all types of institutions to bring a desirable change in the learning style of students to perform better and obtain high academic achievement.
- Proper achievement motivation should be developed in students with the help of proper support and encouragement to the students.
- Students must be informed that enactive, figural and verbal learning style is required for different types of learning, and they should try to develop all sorts of learning styles with sincere effort.

Education in India needs qualitative revamping especially of future students largely dependent on the role of teachers and quality of Education. Academic achievement of students decides the future of their career. All efforts are expected from all the concerned stakeholders to come forward and contribute in a positive manner to make every learner a successful achiever in hislife.

Academic achievement is dependent on various factors, this study focussed only on learning styles and achievement motivation but the findings are encouraging. If all the relevant factors along with the findings of this study are put together in a judicious way it will certainly help the students to obtain high academic achievement that will not only make them happy and satisfied but also develop a habit to become successful in life. The present research has been conducted in view of these points. Its conclusions may prove better assistance in maintaining and promoting Academic Achievement of the Students (the future generation).

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APPENDIX 1

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Prof. K.S. Misra *(Allahabad)*

Consumable Booklet of LSI–MK

(Hindi Version)

कृपया निम्न सूचनाएं भरिये– दिनांक ☐☐☐☐☐☐☐☐

नाम _____ लिंग: पुरुष ☐ स्त्री ☐ आयु ☐ वर्ष

पिता का नाम _____ जन्मतिथि _____

कक्षा _____ संकाय : कला ☐ विज्ञान ☐ वाणिज्य ☐

विद्यालय /कॉलेज _____

निर्देश

आगे के पृष्ठों पर अधिगम शैली से सम्बन्धित 42 कथन दिये गये हैं। आप प्रत्येक कथन को ध्यानपूर्वक पढ़ें तथा यह सोचें कि आप दिये गये अधिगम व्यवहार को **कितनी प्राथमिकता** देते हैं। अपने उत्तर को देने के लिए दिये गये पाँच उत्तर विकल्पों, यथा– **बहुत अधिक, अधिक, साधारण, कम** अथवा **बहुत कम** में से किसी एक के खाने में, जो आपके उत्तर के सबसे निकट हो, सही का ☑ चिह्न लगायें। कृपया सभी 42 कथनों के उत्तर अवश्य दें। आपके उत्तरों को गोपनीय रखा जायेगा।

I. फलांकन तालिका

Learning style	ER	EC	FR	FC	VR	VC
Raw score						
z-Score						
Grade						

II.

Learning style	Enactive (ER+EC)	Figural (FR+FC)	Verbal (VR+VC)
Raw score			
z-Score			
Grade			

III.

Learning style	Reproducing (ER+FR+VR)	Constructive (EC+FC+VC)	Total
Raw score			
z-Score			
Grade			

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क्र. सं.	कथन	प्राथमिकता					प्राप्तांक
		बहुत अधिक	अधिक	साधारण	कम	बहुत कम	
1.	व्याख्यानों के टेप को सुनकर उन्हें समझना।	☐	☐	☐	☐	☐	⬭
2.	कम्प्यूटर पर चित्र देखना।	☐	☐	☐	☐	☐	⬭
3.	रेखाचित्र (ग्राफ) की शब्दों में व्याख्या करना।	☐	☐	☐	☐	☐	⬭
4.	दूसरों से सुनकर याद करना।	☐	☐	☐	☐	☐	⬭
5.	पुस्तक में बने चित्र की कार्बन की मदद से नकल करना।	☐	☐	☐	☐	☐	⬭
6.	विभिन्न क्रियाओं से जुड़े अपने अनुभवों को अपने शब्दों में लिखना।	☐	☐	☐	☐	☐	⬭
7.	जोर से बोलकर पढ़ना।	☐	☐	☐	☐	☐	⬭
8.	पुस्तक में दिये गये चित्र पर किसी नुकीली चीज को चलाकर कागज पर चित्र बनाना।	☐	☐	☐	☐	☐	⬭
9.	शिक्षक से किसी समस्या के अनेक समाधानों में से सबसे अच्छे समाधान को पूछना।	☐	☐	☐	☐	☐	⬭
10.	अपने द्वारा लिखे गये प्रश्नों के उत्तर को बार-बार पढ़ना।	☐	☐	☐	☐	☐	⬭
11.	पुस्तक में दिये गये चित्र को मन में बनाना।	☐	☐	☐	☐	☐	⬭
12.	किसी काम को करने की विधि को चरणबद्ध ढंग से लिखना।	☐	☐	☐	☐	☐	⬭
13.	उपयुक्त विषय-वस्तु को लिखकर याद करना।	☐	☐	☐	☐	☐	⬭
14.	पुस्तक में बने चित्र को देखकर चित्र बनाना।	☐	☐	☐	☐	☐	⬭
15.	लगभग एक जैसी चीजों में समानताएं याद करना।	☐	☐	☐	☐	☐	⬭

Areas	ER					EC	FR					FC	VR					VC
Item No.	1	4	7	10	13	–	2	5	8	11	14	–	3	6	9	12	15	–
Raw Score																		
Total Score																		

क्र. सं.	कथन	प्राथमिकता					प्राप्तांक
		बहुत अधिक	अधिक	साधारण	कम	बहुत कम	
16.	स्वयं को बिना बोले सुनकर किसी बात को याद करना।	☐	☐	☐	☐	☐	⬭
17.	किसी चित्र को बार-बार बनाना।	☐	☐	☐	☐	☐	⬭
18.	लगभग एक जैसी चीजों में अन्तर याद करना।	☐	☐	☐	☐	☐	⬭
19.	**स्वयं** पुनः स्मरण कर यह जानना कि स्वयं को कितनी बातें याद हुईं।	☐	☐	☐	☐	☐	⬭
20.	एक पाठ से सम्बधित अनेक चित्रों को देखना।	☐	☐	☐	☐	☐	⬭
21.	पुस्तक में दी गई व्याख्याओं को समझना	☐	☐	☐	☐	☐	⬭
22.	उपकरणों को बार-बार इस्तेमाल करना।	☐	☐	☐	☐	☐	⬭
23.	किसी गतिविधि से सम्बन्धित चित्रों को बनाना।	☐	☐	☐	☐	☐	⬭
24.	पुस्तक में दी गई जानकारी को अपने अनुभवों से सम्बन्धित करना।	☐	☐	☐	☐	☐	⬭
25.	पुस्तक में दी गई गतिविधियों व क्रियाकलापों को स्वयं करना।	☐	☐	☐	☐	☐	⬭
26.	दो या अधिक चित्रों में समानताएं खोजना।	☐	☐	☐	☐	☐	⬭
27.	सीखी जाने वाली बातों को एक दूसरे से सम्बन्धित करना।	☐	☐	☐	☐	☐	⬭
28.	विषय सीखने से सम्बन्धित गतिविधियों में भाग लेना।	☐	☐	☐	☐	☐	⬭
29.	दो या अधिक चित्रों में अन्तर ज्ञात करना।	☐	☐	☐	☐	☐	⬭

Areas	ER		EC			FR		FC			VR		VC	
Item No.	16	19	22	25	28	17	20	23	26	29	18	21	24	27
Raw Score														
Total Score														

क्र. सं.	कथन	प्राथमिकता					प्राप्तांक
		बहुत अधिक	अधिक	साधारण	कम	बहुत कम	
30.	दो या अधिक शाब्दिक विवरणों की तुलना करना।	☐	☐	☐	☐	☐	◯
31.	सीखते समय अपने हाथों से चीजों को पकड़ना।	☐	☐	☐	☐	☐	◯
32.	आँकड़ों के आधार पर ग्राफ (आरेख) बनाना।	☐	☐	☐	☐	☐	◯
33.	किसी समस्या पर विभिन्न दृष्टिकोणों के आधार पर विचार करना।	☐	☐	☐	☐	☐	◯
34.	अपने हाथ से मॉडल बनाना।	☐	☐	☐	☐	☐	◯
35.	देखे गये जीवों के चित्र बनाना।	☐	☐	☐	☐	☐	◯
36.	विभिन्न स्रोतों से प्राप्त जानकारी को पुन: संगठित करना।	☐	☐	☐	☐	☐	◯
37.	अपने नये व पुराने क्रियात्मक अनुभवों की तुलना करना।	☐	☐	☐	☐	☐	◯
38.	देखी गयी वस्तुओं के चित्र बनाना।	☐	☐	☐	☐	☐	◯
39.	प्रश्नों का उत्तर लिखते समय अनेक पुस्तकों की विषयवस्तु का विश्लेषण करना।	☐	☐	☐	☐	☐	◯
40.	अपने नये क्रियात्मक अनुभवों को पुराने अनुभवों से सम्बन्धित करना।	☐	☐	☐	☐	☐	◯
41.	प्रत्येक चित्र के मुख्य भागों को आकर्षक बनाना।	☐	☐	☐	☐	☐	◯
42.	किसी पाठ की विषयवस्तु पढ़ते समय उसमें नये विचार जोड़ना।	☐	☐	☐	☐	☐	◯

Areas	ER	EC				FR	FC				VR	VC				
Item No.	–	31	34	37	40	–	32	35	38	41	–	30	33	36	39	42
Raw Score																
Total Score																

APPENDIX II

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Prof. Pratibha Deo (Mumbai)
Dr. Asha Mohan (Chandigarh)

REUSABLE BOOKLET

OF

AMS (n-Ach)- DM

English Version

INSTRUCTIONS

1. A separate response sheet is provided to you for marking your responses.
2. Do not put any mark on this booklet.
3. For every statement, the possible responses are divided into five categories which are :

Always	Frequently	Sometimes	Rarely	Never

Read each statement of an item very carefully and put a tick under the category which, in your opinion, best expresses your feelings about the statement. If you feel, the statements is true for you always, put a Tick mark ✓ .

4. Do not leave any item blank. A response must be made to each statement.
5. This is not an ability test and there are no right or wrong responses. This is only an effort to measure your feelings.
6. Do not spend too much time on one statement. There is no time-limit for completing this work, but try to work quickly and carefully and try to give the first and the best response that comes to your mind on reading each statement.
7. The results will be kept confidential and will be used only to your advantage and for research purposes only. They will never be used for any disadvantage to you. So, please do not worry and try to be honest and frank in giving your responses.
8. The results, if you so desire, can be used for giving you useful guidance, and we hope the results of this study should prove valuable in improving your achievement, academic or otherwise.
9. Be sure to answer every item.
10. If you have any doubts or querries, please seek clarification before you start responding to item no. 1. Once you start giving responses, there should be no questions or querries.
11. Please do not change your response once you have marked it.

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Sr.No.	STATEMENTS
1.	I shall be very much pleased if I have to miss the classes for some days.
2.	I pay full attention to the work in the class.
3.	I mind much if I reach late in the class.
4.	I love to read more and more to find unknown regions of knowledge.
5.	I love to have a personal library, not counting text-books.
6.	I set standards for myself and then strive to achieve them.
7.	I wish to specialize and become top most in the field of my liking.
8.	I like to experiment and create new things and surprise people.
9.	I work hard for hours together to be successful in whatever I undertake.
10.	I have a tendency to find solutions of problems and puzzles other people fail at.
11.	I aspire to get excellent results in all academic competitions.
12.	I am ready to leave the job half done and try a new one.
13.	I get nervous in the examination if one or two questions are not from the syllabus.
14.	I prefer to go to a party rather than prepare for an examination next week.
15.	On getting low marks, I feel disappointed and determine to work hard to do better next time.
16.	I think, I find my lessons meaningful and interesting.
17.	While studying, my mind wanders off the lesson and I get lost in imagination.
18.	I think, it is better to gossip away in the canteen than to attend the classes.

Sr.No.	STATEMENTS
19.	When the teacher is teaching, I like to read stories / novels / comics or make cartoons in the class.
20.	The school / college haunts me and I want to leave it at the very first opportunity.
21.	It irritates me a lot if I have to stay late in the school /college for some lectures.
22.	I want to go to college/university because there is a plenty of opportunity to enjoy life.
23.	I think studies, sports and other activities can go together.
24.	I agree that the present course of my study will help making my future life a success.
25.	I feel very much frustrated if I do not get a chance to complete in the field of my choice.
26.	I regularly take down notes in the class and complete my assignments.
27.	I plan to study carefully all the year round in an effort to get good marks in all the subjects in all the tests.
28.	I believe in work first and play later.
29.	I do a lot of preparation at home for the next day's work in the class.
30.	I like to ask questions regarding every information given in tables and charts in the books rather than leave them as such and read further.
31.	I think my teachers are competent in their work.
32.	I like to create nuisance in the class and annoy the teacher.
33.	I try my utmost to please my teacher through work and not through flattery.
34.	My friends consider me dull and shirker.
35.	It is true that my teachers think of me as a sincere and hard working student.

Sr.No.	STATEMENTS
36.	I feel hurt if others (parents, teachers and friends) criticise me and I try to improve upon my weaknesses.
37.	My parents advise me to take life easy and never bother too much for studies or for future life.
38.	I wish to carry my mission forward inspite of facing a lot of criticism.
39.	I think of life to be an intellectual challenge.
40.	I am interested in organizing the activities of a group team / class / committee.
41.	I try to get associated with top most person in the field of my choice.
42.	I love to have some adventure in my leisure hour.
43.	I would like to watch a surgical operation being performed.
44.	I like to compete in dramatics.
45.	I think of dancing and music to be good hobbies for students.
46.	I have a strong desire to be a champion in games /sports / athletics.
47.	I have tried to get in the sports team of my school /college, to represent my team in other states or countries.
48.	I believe sports develop initiative, leadership and discipline.
49.	Hill climbing and mountaineering are a welcome challenge, I would like to take.
50.	On a holiday, I prefer going for cycling, swimming or boating to sitting at home without much work.

Pratibha Deo *(Pune)*
Asha Mohan *(Pune)*

Answer Sheet of AMSn-DM

(English Version)

Please fill in the following informations :– **Date** | | | | | | | | |

Name _____

Sex : Male/Female) _____

Qualifications _____

Class _____

Roll No. _____

Residence _____

SCORING TABLE

Score	Percentile	Interpretation

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Check ●

Item No.	Always	Frequently	Sometimes	Rarely	Never	Item No.	Always	Frequently	Sometimes	Rarely	Never
1	☐	☐	☐	☐	☐	26	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	27	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	28	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐	29	☐	☐	☐	☐	☐
5	☐	☐	☐	☐	☐	30	☐	☐	☐	☐	☐
6	☐	☐	☐	☐	☐	31	☐	☐	☐	☐	☐
7	☐	☐	☐	☐	☐	32	☐	☐	☐	☐	☐
8	☐	☐	☐	☐	☐	33	☐	☐	☐	☐	☐
9	☐	☐	☐	☐	☐	34	☐	☐	☐	☐	☐
10	☐	☐	☐	☐	☐	35	☐	☐	☐	☐	☐
11	☐	☐	☐	☐	☐	36	☐	☐	☐	☐	☐
12	☐	☐	☐	☐	☐	37	☐	☐	☐	☐	☐
13	☐	☐	☐	☐	☐	38	☐	☐	☐	☐	☐
14	☐	☐	☐	☐	☐	39	☐	☐	☐	☐	☐
15	☐	☐	☐	☐	☐	40	☐	☐	☐	☐	☐
16	☐	☐	☐	☐	☐	41	☐	☐	☐	☐	☐
17	☐	☐	☐	☐	☐	42	☐	☐	☐	☐	☐
18	☐	☐	☐	☐	☐	43	☐	☐	☐	☐	☐
19	☐	☐	☐	☐	☐	44	☐	☐	☐	☐	☐
20	☐	☐	☐	☐	☐	45	☐	☐	☐	☐	☐
21	☐	☐	☐	☐	☐	46	☐	☐	☐	☐	☐
22	☐	☐	☐	☐	☐	47	☐	☐	☐	☐	☐
23	☐	☐	☐	☐	☐	48	☐	☐	☐	☐	☐
24	☐	☐	☐	☐	☐	49	☐	☐	☐	☐	☐
25	☐	☐	☐	☐	☐	50	☐	☐	☐	☐	☐

Check ●