CHAPTER-I
INTRODUCTION

1.1 INTRODUCTION

Cognitive styles, learning styles and study skills are considered very important dimensions of individual differences which constitute the core basis of effective instructional programmes. A number of researchers in foreign countries have discovered that ethnicity, races or different cultures do exercise significant influence on every aspect of the personality of the child. Cognitive styles, learning styles as well as study skills are no exceptions. In India, few attempts have been made to explore this area; still much remain to be explored. Academic achievement of prospective teachers in relation to their cognitive styles, learning styles and study skills has not been investigated so far by any researcher. Therefore, this study deserves the attention of the researcher.

1.2. ACADEMIC ACHIEVEMENT

Academic achievement has been considered a vital factor in life and is the most important goal of education. Despite many varied statements about the aims of education, the academic development of a pupil continues to be the primary concern and most important goal of education. Ours is an age of competition. Every parent sets high goals for his child. In this rapid changing society and world, with the advancement of science, technology, education, culture and civilization, the people have become educational minded. Good academic record predicts the future of the child. At every step in life, academic
record speaks for an individual. At the time of admission, for entrance of a job, for scholarship and for further studies, good academic result is the only recommendation. So, used in the broad sense or educational growth, the term academic achievement refers to the acquisition of all the behavioural changes associated with cognitive, affective and psychomotor domains. But in the context of school situation, it refers to the achievement made by the pupils in their subjects of study. It is the accomplishment or proficiency of performance in a given skill or body of knowledge.

Academic achievement means the knowledge attained or skills developed, as measured by a standardized test, or a test prepared by the teacher, or, by both. Achievement is directly related to pupil's growth and development in educational field, which is helped by learning and teaching process, that takes place in the class. Admittedly, academic achievement is a complex phenomenon that requires different approaches to understand and interpret the knowledge concerned with a subject.

It can also be visualized as “status or level of a person’s learning and his ability to apply what he has learnt” (Pressy, Robinson and Harrock, 1967). This definition conveys only a narrow meaning of the term achievement. There is, however, a much broader approach which includes attitudes, interests and values as aspects of achievement. The achievement is considered to be the product of learning, attitudes and interests because they are learned, acquired, retained and forgotten just as knowledge and skills are. Thus, achievement means a
person’s level of skill or range and breath of information and what he has accomplished in a designated area of learning or behaviour.

Webster opines (1973), “Academic achievement is the performance by a student in a course based on formal study in an institution of learning”.

Theoretically, achievement has two aspects – absolute and relative. In absolute terms, the marks or grades earned by a pupil or assigned to him by the teachers on the basis of his written or oral (test) performance in a particular situation are taken as measure of his absolute achievement. An absolute measure, however, is only a myth. When a learner’s written or verbal response or answer to a question is judged in terms of marks, the teacher is consciously or unconsciously comparing the response to some other response, may be of other learner or learners or a response given in a book or the one in the teacher’s head or his expectation.

While Good (1973) defines, “Academic achievement is one part of the wider term i.e., educational growth, which includes knowledge attained or skill developed in the school subjects, usually evaluated by the test scores or by marks, assigned by the teachers or both”. Academic achievement mostly pertains to the fields of languages, social sciences, mathematics and physical sciences. It depends upon a combination of characteristics and abilities that a child attains in the school environment. These can be the potential ability of a person to deal with abstract concepts and engage successfully in activities that involve literary or classical learning experiences.
Academic achievement has always been the centre of educational research, as it is one most important goal of education.

**Trow (1960)** defines academic achievement in “Psychology in teaching and learning” as, “the attitude, ability or degree of competence in school tasks, usually as measured by standardized tests and expressed in age or grade units based on norms derived from a wide sampling of pupil’s performance”.

The definition given in a preceding paragraph indicates that there is substantial agreement among the authorities regarding the nature of academic achievement in as much as all of them place emphasis on knowledge attained or skills developed in the academic subjects. It generally refers to level of success that a child has acquired in a particular subject.

**Page and Thomas (1979)** in International Dictionary of Education, define achievement as “Performance in school, or college in a standardized series of educational test. The term is used more generally to describe performance in the subjects of the curriculum”. **Biswa and Aggarwal (1971)** also emphasized these aspects. The level of academic achievement of pupils is most commonly interpreted in terms of academic or educational age or test scores.

**Roe (1960)** has also defined achievement as “the attained ability or degree of competence in school tasks, usually measured by standardized tests and expressed in age or grade units based on norms derived from a wide sampling of pupils’ performance”. In other words, it means that attained level at which the students are performing in school subjects such as
social studies, mathematics, science etc, which is measured by school marks.

Academic achievement is a complex and multidimensional phenomenon. It is a product of the interaction between several factors operating in the pupil, such as abilities, motivation, interest and attitudes and a complicated set of forces operating in functional set-up of the school.

So we can say that achievement outcomes have been regarded as function of two characteristics – 'skill' and 'will.' Academic achievement represents intellectual growth and the ability to participate in the production of knowledge.

### 1.3 IMPORTANCE OF ACADEMIC ACHIEVEMENT

There are several grounds that justify the measurement of scholastic or academic achievement.

Its measurement is justified due to two fundamental assumptions of psychology. First, there are differences within the individual from time to time, known as behaviour oscillations, which account for differences in the scholastic achievement of the same individual from time to time and from one educational level to another. Secondly, individuals of the same age group, same grade and of the same potential ability usually differ in the scholastic achievement.

Academic achievement is the outcome of general and specific learning experiences. It is actually the competency shown by the student in the subjects, which he has learnt in the educational institution. Apart from this, continuous appraisal of academic achievement is now being increasingly pleaded since all education has become achievement – oriented.
High achievement is considered as one of the primary goals of education since it has come to be recognized as a strong basis for ambition and progress. Achievement encompasses enhancement, “self-actualization” and Maslow would say, self improvement and some forms of competition. Achievement thus, means all those behavioural changes that take place in the individual as a result of learning experiences of various kinds. High achievement in school, therefore, builds self esteem and self-confidence which lead to better adjustment in life.

It is strongly argued that ranking of students, whether in marks or grades or in some other index, is necessary for effective teaching and learning, for classification, guidance and direction of efforts and measurement of educational performance. Symonds (1927) listed incitement to study, promotion of competition, determination of promotion assistance in education and vocational guidance, awarding of credits and honours among the purposes of marks. Therefore, educationalists and psychologists have been intensively interested for the last six decades in studying in the complex determinants of academic performance.

Academic achievement of the student is the most cherished concern of parents and teachers in our culture.

1.4 FACTORS AFFECTING ACADEMIC ACHIEVEMENT

In view of the importance of education and academic achievement, it becomes necessary to identify factors which differentiate or affect the individual in the level of achievement. The level of achievement can be attained to different levels of respectivity between individual and their ability to demonstrate
the proficiency attained by them from the instructions imparted to them. The difference in the respectivity on ability to display the talent of skills would depend on factors which are inherent and also which influence the individual’s interaction to the system of education at college.

Academic Achievement is considered the unique responsibility of educational institutions. Knowledge of the level of correlation between different factors and academic achievement is therefore, necessary for a teacher in ascertaining what contributes to high and low achievement of students. This is also of great concern to the parents, institutions and the society. Truly speaking, the future of any institution depends upon the academic achievement of its students.

Factors which influence academic achievement, can be studied under two broad headings, i.e.

**Individual Factors:** The factors presented within the individual are:

(i) **Cognitive factors**- e.g. intelligence creativity, problem solving ability, aptitude and aspirations.

(ii) **Non-cognitive factors**- e.g. Study habits, learning styles and self-concept of the learner.

**Environmental Factors:**

The nature of child’s development is greatly influenced by the environmental conditions in which they are brought up. Environmental factors are of two categories:
(a) **Home Environment**: This includes the socio-economic status of family, family relationships, parental aspiration, social expectations etc.

(b) **School Environment**: This includes the facilities of classroom, library, laboratory, teacher's personality, methods of teaching, interaction among students of co-curricular activities and peer group influence.

Education is a product of the interaction of many factors or variables stemming from within the individual and the environment. For environment, educational researchers usually resort to empirical definitions of the 'climate' or 'atmosphere' of schools and homes. Generally environment is defined as the aggregate of the various forces and stimulations which the individual receives from conception to death. Environment includes all the physical and cultural factors and conditions influencing the existence and development of organism.

Academic achievement is the quantity and quality of learning in a subject or a group of subjects as assessed by examination marks. In the present study, academic achievement of students is measured with the help of marks which they have obtained in their final exams.

### 1.5 Cognitive Styles

Cognitive refers to the process by which knowledge is acquired. Perception, memory, thinking and imagination characteristics in which cognition is used or exploited is known as cognitive style.
Messick (1976) define cognitive style in term of consistent patterns of organizing and processing information. Witkin (1954) gave the field independence and field dependence dimensions of cognitive style model.

As the name implies the field independent person is likely to deal with elements independent of their background, whereas field dependent person deals with the total field or situation. In other words, field independent person consistently approaches a wide variety of tasks and situations in an analytical way, separating elements from background. The field dependant person approaches situation in a global way seeing the whole instead of the parts.

In education concept of style has been most often used to indicate an individual's quality, forms activity or behaviour sustained over the time.

1.6 LEARNING

Learning is defined as modification through experience. It is also defined as acquisition of behaviour pattern. Learning is an active process and an enrichment of experience. In learning, there is an interaction of the environment with the organism. Man lives in a complex environment and these innate guides of behaviour are inadequate for his adoption to the environment. He has to profit by experience or learn to make his responses more suitable to the environment. In this sense, we may call learning as the process of acquiring appropriate responses.
According to Garret (1981) “Learning is a universal human experience. New situations demand new learning. The demand for changes, modifications in behaviour and the ability to make such changes continues then throughout life cycle”.

Education is not mere imparting of information in some selected subjects. Acquisition of knowledge is also one of the outcomes of education. The role of education now is to help the child to discover himself, to develop his innate abilities and above all to cultivate desirable attitudes and values. Science and technological developments in the last four decades have accelerated this process. Bruner (1960), the famous psychologist has suggested that teaching should be regarded as a temporary arrangement intended to enhance the learner's capacity to learn for himself/herself. Traditionally, teaching has been viewed as a science i.e. as a systematic application for learners.

1.7. LEARNING STYLES

The concept of cognitive styles, learning styles and study skills have recently assumed a special significance in educational contents because these are considered very important dimensions of individual differences which constitute the core basis of effective instructional programme. Some Proponents of these construct categorically hold that these are more useful than intelligence, personality or as a matter of fact any other variable in predicting the academic achievement of students.
Several researchers have defined learning styles in their own ways. There is a little agreement among the researchers with regard to the concept of learning styles. Some researchers include learning style under the caption of cognitive style. They consider cognitive style as stable construct, which relate to thinking, problems solving, information processing, retaining and learning. On the other hand some researchers hold that the concept of learning style has cognitive, affective, meta-cognitive and physiological dimensions and thus is broader concept than cognitive style. Still there are some researchers who have been using cognitive style and thinking style interchangeably. Here an attempt has been made to give some definitions of learning styles so as to make the concept of learning style more clear.

Rosenberg (1968) defined learning styles as individual's characteristic pattern of behaviour when confronted with a learning problem.

Kolb (1976) holds that learning styles are one's preferred method /ways for perceiving and processing information. Dunn and Dunn (1975) state that learning style may be defined in terms of those environmental, emotional, sociological and physical characteristics through which the individual learns more rapidly.

Dunn and Dunn (1992) define learning styles as those environmental, emotional, sociological and Physical Characte:istics through which an individual learns most easily. In other words, these are the ways in which individual begins to concentrate on process, internalize and retain new and difficult academic information.
Verma (1996) used Hindi version of Indian adaptation of Kolb's learning styles inventory. This inventory assesses four learning styles namely-imaginative, analytical, precision and dynamic. The greater strength of the learner with imaginative learning styles lies in their imaginative ability. They generate new ideas, sense opportunities, investigate new patterns recognize discrepancies and problems and generate alternatives. Learners with analytical learning styles perceive information abstractly but process it reflectively. They are more interested in abstract concepts than in people. Their greater strength lies in their ability to create theoretical models through the process of inductive reasoning. Learners with precision learning styles perceives information abstractly and their greater strength lies in the practical application of ideas. Learners with dynamic learning styles depend upon the use of concrete experiences and active experimentation modes. They perceive information concretely. Their greater strength lies in doing things, carrying out plan and experiments and getting involved in new experiences.

In view of Jackson (2002) learning styles are personal qualities that influence a student's ability to acquire information and to participate in learning experience.

**TYPES OF LEARNING STYLES:**

Aggarwal and Pandey (1977) analyzed the available literature on the types of learning styles and chose the following eight learning styles. These are:

1. Individualistic Vs Non-Individualistic
2. Field independent Vs Field dependent.
3. Motivation centered Vs Non-motivation centered.
5. Environmental oriented Vs Environment free.
6. Flexible Vs Non-flexible.
7. Short attention span Vs Long attention span,
8. Responsible Vs Irresponsible.

Kolb (1976) has designed a learning style inventory and defined four types of learning styles,
1. The convergent learning style
2. The divergent learning style
3. The assimilative learning style
4. The accommodative learning style

The convergent learning style relies primarily on the dominant learning abilities of abstract conceptualization and active experimentation. The divergent learning style has the opposite strengths of the convergent style, emphasizing concrete experience and reflective observations. In assimilative learning style the dominant learning abilities are abstracts conceptualization and reflective observation. The accommodative learning style has the opposite strength of assimilation, emphasizing concrete experience and active experimentation. Alternatively, when the learning styles of students are similar to those of an instructor, they may exhibit greater achievement and personal satisfaction.
Felder (1996) defined a student’s learning style by the answer to four questions, what type of information does the student prefer; sensory (sounds and physical sensations), or intuitive (memories, ideas, and insights)?

1. How is information received: visual (pictures, diagrams, graphs, and demonstrations), or verbal (sounds, written and spoken words, and formulas)?

2. How do they process information: actively (through engagement in physical activity of discussion) or reflectively (through introspection)?

3. How does the student progress towards understanding: sequentially (in a logical progression of small incremental steps), or globally (in large jumps absorbing material randomly)?

Most commonly used learning styles are based on sensory preferences i.e., visual, auditory and kinesthetic preferences.

(A) **Visual Learner**: Visual learners relate most effectively to written information, notes diagrams and pictures, typically they will be unhappy with a presentation where they are unable to take detailed note to an extent. Information does not exist for a visual learner unless it has been seen written down. This is why some visual learner take notes even when they have printed course notes on desk in front of them. Visual learners will tend to be most effective in written, communication, symbol manipulation etc.

(B) **Auditory learners** relate most effectively to the spoken words. They will tend to listen to a lecture and then take
notes. Auditory learners may be sophisticated speakers and may specialize effectively in subjects like law and politics.

(C) **Kinesthetic learners** learn effectively through touch and movement and learn skills by imitation and practice. Kinesthetic learners can appear slow in that information is normally not presented in a style.

### 1.8 STUDY SKILLS

Study skills mean what skills students use for their study i.e. whether systematically, efficiently or otherwise.

Walter and Cassel (1971) have given seven study skills. These are (A) Goal orientation i.e. goal setting and goal striving (B) Activity structure i.e. skill of physical setting, mental setting, sense of order, use of times (C) Scholarly skills i.e. skill of mastery of the subject (D) Lecture mastery i.e. skill of recording the teacher’s idea in sequence (E) Text book mastery i.e. obtaining information from text book source (F) Examination mastery i.e. skill of preparing for examination, skill of answering, skipping etc. (G) self mastery i.e. self confidence, attitude towards work.

### 1.9 EMERGENCE OF THE PROBLEM

In the past several years, there has been extensive research on various approaches of teaching in higher education. But no one method or approach has been found consistently superior to all. It reveals the fact that no one approach can be best suited to all students. The most important question is to determine which students learned best and under best
Researchers and educationists are now attempting a thorough work in the area of cognitive and learning styles and have found it a very potential one in influencing the student’s learning. Emphasizing the need of diagnose the learning styles of the students. Dunn and Dunn (1975) says, “To bring the learners of varied differences into a confining environment and to group them in a way that makes educational sense in virtually impossible unless we examine each of these complex individuals to identify exactly, how he or she is likely to learn more effectively”.

Most crucial problem of education now is how to cater to the individual differences so that teaching may be made more meaningful and adaptive for all students. Researchers, educationists and psychologists have developed various methods and techniques of teaching and learning. Identifying students cognitive styles and learning styles are such techniques. It is very important for the teacher to know the academic level of the students, as to what are the cognitive styles, learning styles of the students? Do they very significantly? What type of learning procedure and activities promote the most rapid and successful learning by students who have deeply different patterns for their own learning styles? Up to what extent the cognitive styles, learning styles and study skills of the students affect their academic achievement.
It is now being increasingly realized that cognitive styles, learning styles and study skills of students do effect their achievement. Therefore, these need to be probed deeper.

Although very few studies have been conducted, yet study on college students have not been conducted in India as well as in abroad especially in B.Ed. colleges. Therefore, there is urgent need to explore this field further.

Cognitive and learning styles as well as study skills might provide a basis for tailoring the mode of presentation as well as the nature and characteristics of learners so as to develop compensate for or capitalize upon student’s characteristics for the optimization of subject mater learning. Also teacher performance might be improved through the awareness of cognitive styles, learning styles as well as study skills, which could lead to increased flexibility in teacher’s own stylistic preference for particular evaluation and teaching method.

Motivated by the above considerations and by the important place of cognitive styles, learning styles and study skills of prospective teachers and their effect on their academic achievement. The investigator has undertaken the present study.

1.10 STATEMENT OF THE PROBLEM

"A STUDY OF ACADEMIC ACHIEVEMENT OF PROSPECTIVE TEACHERS IN RELATION TO THEIR COGNITIVE STYLES, LEARNING STYLES AND STUDY SKILLS"
1.11 OBJECTIVES OF THE STUDY

1. To find the relationship between dependent variable of academic achievement of prospective teachers and independent variables of cognitive styles, learning styles and study skills.

2. To set up regression equations by taking independent variables one by one with dependent variable of academic achievement.

3. To find the difference in the cognitive styles learning styles and study skills of prospective teachers due to gender differences and urban rural differences.

1.12 DEFINITIONS OF KEY TERMS

1. Cognitive Styles:

Cognitive styles denoted consistent patterns in individual modes of functioning for organizing and processing information. (Witkin, 1954).

2. Learning Styles:

As per the author of test Venkataraman (1994), “Styles depend upon cerebral dominance of an individual in retaining and processing different modes of information in his own style of learning”. Styles indicate the functions of the brain. Individual’s learning strategy and information processing are based on the preferences of the brain area. Styles are propensities rather than abilities. They are ways of directing the intellect, which an individual finds comfortable.
Learning styles are stable attributes or preferences or habitual strategies used by individual learner to organize and process information for problem solving. (Kolb, 1981)

3. **Study Skills:**

Study skills are the requisites for effective learning through goal orientation, activity structure, scholarly skills, lecture mastery, textbook mastery, examination mastery and self-mastery activities (Walter and Cassel, 1971).

4. **Academic Achievement:**

According to Thorndike (1926), “When we use an achievement test, we are interested in determining what a person has learned after he has been exposed to a specific kind of instruction”.

In the present study these are the students scores which they have obtained after one year exposure to specific kind of instructions in the final B.Ed. examination, conducted by Panjab University, Chandigarh.

1.13 **NEED AND SIGNIFICANCE OF THE STUDY**

During the past three decades some amount of research has been done in the field of cognitive styles, learning styles as well as study skills in the foreign countries. As far as India is concerned this field has not been explored fully. There are few studies on school children but none of the researcher has investigated the academic achievement of prospective teachers in relation to their cognitive styles, learning styles and study skills.
The common practice of ranking or grouping students according to scores on intelligence, achievement and socio-economic status provide only a partial picture. Therefore it becomes necessary to examine the individual to identify exactly, how he or she is likely to learn more effectively.

Significance of the study lies that if teacher educators accommodate an array of cognitive and learning styles by systematic varying teaching and assessment methods to teach every prospective teacher, they will observe immediate and powerful increase in the academic achievement of prospective teachers.

In recent years technology is expected to affect the educational processes significantly. So, it is desirable to identify the cognitive styles, learning styles and study skills of students.

Further, it is needless to mention that knowledge of relationship of cognitive and learning styles, study skills and academic achievement render a great help to student-teachers, teacher educators, guidance workers, curriculum designers as well as educational managers in the improvement of total teaching learning process.

It has been seen by the researchers that there are gaps between the teaching styles of the teachers and learning styles of the learners. Because of this mismatch the students may become bore and get discouraged. Some learners may loose interest and leave the study. Therefore, the findings of the present study will be helpful in bridging these gaps.
1.14 INDEPENDENT AND DEPENDENT VARIABLES

Independent Variables:
1. Cognitive Styles
2. Learning Styles
3. Study Skills

Dependent Variables:
Academic Achievement

1.15 DELIMITATION OF THE STUDY

Delimitation is the boundary which the study is not concerned. Delimitation is a very important factor in research. In order to achieve perfection and to reach to the depth of problem, a study can be delimited with regard to different aspects, namely variables, areas, size of the sample, method of research etc. Keeping in view the limitation of time, energy and resources the investigator delimited the research work as given below:

1. The present study is confined to the state of Punjab only.
2. The present study is delimited to a sample of 800 students studying in B.Ed. colleges only.
3. The study is delimited to B.Ed. colleges, affiliated to Panjab University, Chandigarh only.
4. The study is delimited to both male and female prospective teachers of B.Ed. colleges.
5. This study is delimited to both urban and rural areas.
1.16 ORGANIZATION OF THE RESEARCH REPORT

Introduction and objectives of the study have been given in chapter 1, while chapter II deals with the conceptual framework. In Chapter III review of related studies and hypotheses have been presented while IV Chapter deals with Method and Procedure. In Chapter V, analysis of data along with Interpretation of Data and Discussion of Results have been given, Chapter VI deals with Summary, Conclusions, Educational Implications and Suggestions for further research. Bibliography and Appendices have been given at the end of research report.