CHAPTER 1

1.0 OVERVIEW

The present chapter deals with the conceptual framework of the study. It starts from Education; aims in Education, the National perspectives on Education, School, School Climate, the importance of School Climate, Learning Styles, Families of Learning Styles and the role of perceptual Learning Styles in the learning process and how it helps teachers are discussed. The magnitude of Academic Achievement and how the factors like School Climate and Learning Styles influences Academic Achievement are discussed. This chapter ends with the chapterization.

1.1 INTRODUCTION

School life has a perennial impact on the child. Though this is an oft-repeated axiom, its significance is neither recognized adequately nor translated into concrete action. Those who make decisions in relation to education are often concerned only with the form of education, not its substance. Not enough thought is bestowed on the need to create the right climate in our schools. We must know for a fact that a child’s learning and behaviour depend largely on the kind of school climate he/she lives in. Researchers have pointed out “a significant difference in student achievement between schools with a good school climate and those with a poor school climate.” (Bulach, Malone & Castleman, 1994). We, therefore, must identify the factors that enable a healthy school climate, and create them in every school, because that is the very quintessence of a good school. School Climate is created by the interaction with one another of the organization components, such as culture, structure, system, leadership behaviour and psychological needs of the members of the schools. School Climate is a multidimensional concept. It helps us to understand how schools differ in the Climate.

Every school has its own character, and a distinct identity of its own. This is the sum total of all the values and norms and the adherence to it, which have been internalized by all or most of the people associated with a school, which form a part of everyone's psyche. When people refer to the 'traditions' of a school, they are actually speaking about these deeply embedded characteristics of the school. This becomes the
'school climate'. These are all different ways of describing the 'quality of life' that is experienced and lived by all the participants in the school life. This in turn is recognized by the parents and the community that surround the school. There are obviously various components, which ultimately shape the climate of a school. But all those individual factors by themselves are not as powerful as the combined effect of all the factors, which we call the school climate. It is therefore the cumulative effect that shapes the climate of the school. Students are all influenced by the school climate. In other words, it has a pervasive, deep and marked impact on the way students is going to live their future lives.

Many people recognize that each person prefers different Learning Styles and techniques. Learning Styles group common ways that people learn. Everyone has a mix of Learning Styles. Some people may find that they have dominant styles of learning, with far less use of the other styles. Others may find that they use different styles in different circumstances. There is no right mix. Nor are your styles fixed. You can develop ability in less dominant styles, as well as further develop styles that you already use well.

The three essential P’s of a healthy School Climate are Place, People and Processes. When these three elements are complementary and are in consonance with each other, a congenial climate is created. Every school should aim at creating such a climate. Its positive impact on children will manifest in their better learning and responsible behaviour, which finally makes them, accomplished human beings. (Bulach, Malone & Castleman, 1994).

An individual’s Learning Styles and approach to a Learning Situation have a direct impact on performance and success in Achievement of Learning Outcomes. With the shift from an instructional to a learning paradigm, there will be a proper development. If the student’s Learning Styles are ignored there is a distinct possibility that their learning will not progress as efficiently as expected.
Each learner develops his/her own styles or approach to learn, that suits to their interest, habits, attitudes, environmental conditions, ways of nurturing by their parents and teachers and the clarity of their goal. Learning styles is the sum total of individuals preference for physical, social, emotional and environmental elements in the course of learning.

1.2 EDUCATION

Education undoubtedly is one of the most powerful agencies moulding the character and in determining the future of individuals and nations. Thus the whole area of education is centred on the development of moral aspect of man. Plato emphasized that educational effort should aim at the promotion of virtue. According to Bertrand Russel the chief aim of education is the “formation of character”.

The University Education Commission (1964-1966) summarizes the Indian concept of education as follows; “Education according to Indian tradition is not simply a means of earning a living; nor is it only a nursery of thought or a school for citizenship. It is the initiation into life of spirit, a training of human souls in pursuit of truth and the practice of virtue”.

Theodore Roosevelt states, “Education is continuous and dynamic process. It is a process that leads to all round development of man and creates a ‘sound mind in a sound body’.

Swami Vivekananda states “Education is the manifestation of perfection, dignity already in man. Like fire in a piece of flint, knowledge exists in mind. Suggestion is the friction; which brings it out. G.H.Thompson states, the influence of the environment of the individual with a view to producing a permanent change in his habit of behaviour, or thought and attitude.

According to John Dewey, Education is not preparation for life, rather it is the living. Education is the process of living through a continuous reconstruction of
experiences. It is the development of all those capacities in the individual which will enable him to control his environment and fulfil his possibilities.

1.3 EDUCATION IN INDIA

1.3.1 Aims of Education in India

Educational aims in India should be judged in relation to the lives of the Indian people. Indian civilization is one of the ancient civilizations of the world.

1.3.2 Aims of Education in Ancient India

The aim of education in ancient India was the ultimate outcome of Indian theory of knowledge and the corresponding scheme of life and values. People in ancient India were greatly impressed and affected by the fact of death as the central fact of life. Their one aim of life was to solve the problem of death by achieving knowledge of the whole truth of which life and death are arts and phased. The aim was not simply abstract and theoretical. There were practical and concrete aims too. The first was the acquisition of knowledge. This was evident in the Vedic period. Inculcation of social and civic duties in the minds of the students was also regarded as an important aim of those days. Education for occupation was another important aim. Character training and moral education was regarded as very important aim of ancient Indian education.

1.3.3 Aims of Education in Medieval India

During medieval age religion was the main guiding force in life and society. Medieval civilization centred round religion. The Muslim rulers of India generally took a keen interest in education, and many of them founded schools, colleges and libraries in various places in their kingdoms. The mosque was a centre of instruction and of literary activity. Muslim education included those eternal teachings and values of the Quran and Haditha, which would promote moral and spiritual knowledge. Islamic education aimed at both physical and mental development of the students. Thus it aimed at total development of personality of individual.
1.3.4 Aims of Education in British India

The British uprooted the indigenous system of education in India with definite intentions. The educational system established by the British was colonial in character. It was designed to prepare Indians only for taking certain subordinate positions in Government offices. It was not intended to develop among the people capacities to take leadership and initiative in different walks of life. The main educational objective can better be understood from the following declaration in educational objective can better be understood from the following declaration in the educational policy or Lord Bentinck (1835): “We want a class of persons Indian in blood and colour but English in tastes in opinion, in morals and intellect”. The Wood’s Despatch declared almost the same policy. The aim of British education was to inculcate European knowledge in the minds of the Indians.

1.3.5 Aims of Education in Independent India

After Independence the Indian leaders realized the inherent defects in the system of education introduced by the British. Universalisation of education was the need of the hour. Education must be linked with national development in all directions. With these national goals in view the Government in independent India set up different committees and commissions for educational reforms in the desired lines. These committees and commissions have formulated educational aims and objectives.

According to Indian Education Commission (1964-66), aims of education is increasing national productivity, achieving social and national integration, accelerating the process of modernization, cultivating social, moral and spiritual values.

Many aims have been proposed by philosophers and other educational theorists; they include the cultivation of curiosity and the disposition to inquire; the fostering of creativity; the production of knowledge and of knowledgeable students; the enhancement of understanding; the promotion of moral thinking, feeling, and action; the enlargement of the imagination; the fostering of growth, development, and self-realization; the fulfilment of potential; the cultivation of “liberally educated” persons; the overcoming of
provincialism and close-mindedness; the development of sound judgment; the cultivation of passivity and obedience to authority; the fostering of autonomy; the maximization of freedom, happiness, or self-esteem; the development of care, concern, and related attitudes and dispositions; the fostering of feelings of community, social solidarity, citizenship, and civic-mindedness; the production of good citizens; the “civilizing” of students; the protection of students from the deleterious effects of civilization; the development of piety, religious faith, and spiritual fulfilment; the fostering of ideological purity; the cultivation of political awareness and action; the integration or balancing of the needs and interests of the individual student and the larger society; and the fostering of skills and dispositions constitutive of rationality or critical thinking; the preparation of students for future profession or vocation or trade.

The Secondary Education Commission in India (1951-1952) has greatly emphasized citizenship training in schools. Such training includes the development of certain qualities to character such as clear thinking, clearness in speech and writing, art of community living, co-operation, toleration, sense of patriotism and sense of world citizenship.

According to Fanning (1978) education in environmental matters teaches responsible conduct by individuals in protecting and improving the environment in its full human dimension. Environmental education is intended to promote among citizens the awareness and understanding of the environment, our relationship to it, and the concern and responsible action necessary to assure our survival and to improve the quality of life.

1.4. School and School Education

School education is a deliberate and more-or-less external intervention in the life of a child. Although much learning and teaching takes place at home, in the neighbourhood community, and in actual living communities in rural and tribal India, the school introduces the child to an environment of teaching and learning that, quite by design, marks itself off from the rest of the child’s environment. Tagore’s experience of his first day at school is repeated with greater or less intensity in most children’s first
encounter with school: “...all of a sudden I found my world vanishing from around me, giving place to wooden benches and straight walls staring at me with the blank stare of the blind.” While the school must perhaps have boundaries of its own, as the life of the school cannot just be merged with the life of the community around it, these boundaries must not become barriers. They must, on the other hand, facilitate the creation of vital links between children’s experiences at home and in the community and what the school offers them. It is very important that school teaching and learning takes place in an environment that is aesthetically pleasing. It is also essential that children take an active part in creating such an environment for themselves.

1.4.1 The School Stream

The school stream comprises three stages (i) pre-primary, (ii) primary (or elementary) and (iii) secondary. The primary or pre-learning stage consisting of nursery and kindergarten schools terminates when the children attain the age of five years. At the age of six, they enter the primary stage. There are two levels at the primary stage - the lower primary (Classes I to V) and the upper primary (Classes VI to VIII). Students are expected to complete the primary stage at the age of 13 years and enter the secondary stage. Article 45 of the constitution of India stipulates free and compulsory education for all the children until they complete the age of 14. In 1993, the Supreme Court, in its order in the Unnikrishnan case, has also declared education of children they complete the age of 14 years to be a Fundamental Right. However, the target of universalisation of primary (or elementary) education is yet to be achieved. The secondary stage, in turn, has two levels - the secondary (Classes IX and X) and the higher (or senior) secondary (Classes XI and IX and X) and the higher (or senior) secondary (Classes XI and XII). There is a public examination at the end of Class X called the Secondary School Leaving Certificate (SSLC) examination or the Secondary School Certificate (SSC) examination corresponds to the Matriculation examination of yesteryears. Another public examination is conducted at the end of Class XII called Higher Secondary Certificate (HSC) examination or “10+2 examination”. Secondary and higher secondary education are regulated by State Boards of Higher Education (or Boards of Intermediate Education) respectively. In several states there is only one Board for both the levels. Secondary and Higher Secondary Schools are
managed by state governments as well as by private societies and trusts. The State Boards accord recognition to schools, formulate syllabuses and conduct public examinations. Besides the States Boards, there are two Boards whose jurisdictions extend all over the country, vis., the Central Board of Secondary Education (CBSE), established in 1929 by the Government of India, and the Council for the Indian School Certification Examination (ICSE). Any school in the country can get affiliated to these Boards. Both the Boards conduct Secondary School Certificate (Class X) and Senior School Certificate (Class XII) examinations. There is yet another Board named the National Open School (NOS). It provides secondary and higher secondary education through distance learning mode, and conducts public examinations and awards certificates like any other Board. By the time students complete the higher secondary education, they should have attained the age of 17 years.

1.5 SCIENCE EDUCATION HISTORICAL BACKGROUND

With a long and chequered history of education and training in pure and applied sciences dating back to over 2,600 years, India has had flourishing tradition of scientific research and technological development. Taxila (6th century BC) one of the earliest Universities in the world, attracted students from across the continents. Major fields of study at Taxila included mathematics, astronomy, medicine, surgery and metallurgy. Unfortunately, most of the knowledge was lost during the medieval period. The glorious tradition of original thinking, adventure of ideas and creative innovations was completely snapped.

1.6 SCIENCE AND SCIENCE EDUCATION DURING THE BRITISH RULE

The development of modern science in India is not an organic extension of the earlier tradition. It is an implant by the British in a language that was alien to its people. As with other implants, it needed nourishment and nurturing to be absorbed in the society. Science education was lacking and science was looked upon as an appendage thrust by the British for their own benefit. Until a few decades towards the end of the British rule, the role of science education, scientific and technological research in economic growth and social transformation was rather limited. Only such developments
were introduced that did not lead to a conflict with the interests of the colonial power. The only aim of education including that of science education was to turn out men competent to serve the civilian administration. Consequently, science education and research was uneven and patchy with no facilities. Even those few individuals educated in science lacked opportunities for either gainful employment or for scientific research. They could only procure clerical or teaching jobs. It was only in 1857 that the universities of Bombay, Calcutta and Madras, modelled after the London University, were established. As a concession to the Indian aspirations the foundations for basic sciences were expanded and academic science in the universities received a fillip. It must be stressed that even under such adverse conditions, globally competitive scientific research was carried out by a few scientists like, C.V.Raman, M.N.Saha, S.N.Bose, D.N.Wadia, P.C.Mahalanobis, S.R.Kashyap, Birbal Sahni, S.Ramanujan, S.Chandrashekhar. Many of them were trained in India and carried out their research in Indian universities. The outbreak of the World War I brought about a radical change in science education and in the pattern of scientific research and technological developments. The colonial government being cut off from Britain was forced to actively mobilize local resources of scientific and technical personnel to meet wartime needs.

1.7 POST-INDEPENDENCE PERIOD
1.7.1 NEHRU’S VISION

Within a few decades of the end of World War I, major colonial empires had disintegrated and India became independent in 1947. It is indeed very fortunate that Jawaharlal Nehru was India’s first Prime Minister. Having witnessed first-hand the remarkable developments brought out through the pursuit of science in Europe and particularly in the then Soviet Union, he more than anyone else, realized the crucial importance of science for economic growth and social transformation. Addressing the then National Institute of Sciences (now INSA), Nehru stated, who indeed can afford to ignore science today? At every turn, we have to seek its aid and the whole fabric of the world is of its making. He strongly emphasized the inherent obligation of a great country like India with its tradition of original thinking to participate fully in the march of science. It was equally fortunate that in laying the firm foundation of science and science
education in the country, Nehru’s vision was shared by the then leaders in science who helped Nehru to realize his vision. Raman, one of India’s most eminent scientists said, there is only one solution for India’s economic problems and that is science, more science and still more science.

Homi Bhabha, the father of India’s atomic energy programme, while addressing the General Assembly of the International Council of Scientific Unions, just before his death, emphasized, What developed countries have and what developing countries lack is modern science and an economy based on modern technology. The problem of developing countries is therefore the problem of establishing modern science and transforming their stagnant and traditional economy to the one based on modern science and technology. Bhabha went on to add, An important question we must consider is whether it is possible to transform the traditional economy to the one based on modern technology developed elsewhere without at the same time establishing modern science in the country as a live and vital force? If the answer to this question is in the negative and I believe our experience shows it to be so, then the problem of establishing science as a live and vital force is an inseparable part of transforming an industrially underdeveloped country to a developed country. In the context of establishing modern science and technology as a live and vital force, the importance of science education cannot be over-emphasized. Indeed, science education plays a crucial and pivotal role in the academy of scientific research and technological innovations.

1.7.2 POLICY FRAME

The vision of Nehru of India becoming a beacon spreading to the world not only the message of Buddha and Gandhi of peace and universal brotherhood but also that of science and technology, was translated into working plans through a policy frame that has evolved over the years. The very constitution of the Republic of India (seventh schedule) squarely puts the responsibility for coordination and the determination of standards in the institutions of higher learning and research on the central government, its responsibility also includes central universities, Indian Institute of Science, Institutes of Technology and institutes of national importance declared by the parliament. The constitutional
amendment of 1976 places education including science and technology education in the concurrent list which implies the joint responsibility of the central and the state governments. The Government of India has evolved a machinery to discharge these obligations by designating Ministry of Human Resource Development to function as an administrative ministry and by establishing the University Grants Commission and the All India Council for Technical Education, by acts of parliament to superintend the functioning of higher education in science and technology respectively.

While delivering the convocation address of Allahabad University in 1946, Nehru said, It is science alone that can solve the problems of hunger and poverty, of insanitation and malnutrition, of illiteracy and obscurantism of superstition and deadening customs, of rigid traditions and blind beliefs, of vast resources going to waste of a rich country inhabited by starving millions.

Over the years, the Indian parliament has adopted major policy statements relating to higher education and Science and Technology development. These developments have been largely guided by the Scientific Policy Resolution of 1958, one of the most comprehensive science policy documents ever approved by any legislative body in the world. The parliament approved in 1968, the Technology Policy Resolution, which states that research and development together with Science and Technology education and training of a high order will be provided a pride of place. Basic research and building of the centres of excellence will be encouraged. The quality and efficiency of Science and Technology generation and the related delivery system will be continuously monitored and upgraded. The policy statement calls for strengthening linkages between educational institutions, and government machinery. The central government has periodically constituted National Commissions on Education to assess the system of education and for recommending ways and means to diversify, improve and update the system, consistent with the changing environment. Some of the commission’s reports were translated into National Policies on Education. Thus the National Commission on Education of 1964 chaired by D.S. Kothari resulted in the preparation of the National Policy of Education in 1968. In 1986, the national Policy was suitably
modified, amended and updated. This was further modified in 1992 in the light of Ramamurthy Committee’s report covering a whole range of operational, financial and technical issues. The statements emphasize education to be a unique investment for the present and the future, with emphasis on equal access on requisite merit, mobility of students and faculty and networking of educational institutions, greater autonomy and accountability, relevance of curricula, excellence in research, and mobilization of resources. Thus the statement first made by the Kothari Commission that “the destiny of this country is shaped in the classrooms and laboratories of schools, colleges and universities are re-echoed”. India has committed whole heartedly to science and has provided the necessary policy support for Science and Technology human power development. There is also a systematic planning process in place. The policies and plans have helped India develop a vast infrastructure for higher Science and Technology education, and have provided the second largest manpower in the world, with the best in the system comparable to the best anywhere in the world. However, inadequate understanding of the spirit of the recommendations has led to over centralization of authority, bureaucratization by controlling agencies and over-dependence on government support and intervention. The system has become too large and monolithic to ensure quality and accountability.

1.8 GROWTH OF THE SYSTEM OF SCIENCE EDUCATION

Recognizing the crucial role played by Science and Technology in the process of economic growth and social transformation, major emphasis was laid on higher science education during early years of Independence. Thanks to the political leadership, Coudevel policy support and substantial investment, India today possesses one of the oldest, the largest and the most diverse infrastructure. For Science and Technology education and training several institutions comprising the Indian Institute of Technology (IIT’s), Indian Institute of Science (IISc), about a dozen institutes of national importance, two hundred and odd universities, and over 8,000 colleges, exist. This infrastructure has already made a substantial impact on the country’s scientific, industrial and economic development. There has been impressive development since Independence in various fields such as agriculture, industry, atomic energy, space programmes, manufacturing,
and health care. More than the creditable performance of the Science and Technology personnel in India, the performance of Indian Diaspora cultured in our colleges and universities has been highly impressive. Science and Technology personnel from India are highly sought after and respected in the countries of their adoption. Some of the academic research institutions such as IISc, Bangalore; TIFR, Mumbai; IITs and a few universities such as Delhi, Jawaharlal Nehru University, Poona, Banaras Hindu University, Varanasi, Central University, Hyderabad; and Jadavpur, have developed global reputation and attract increasingly large number of students from South East Asia, Middle East and Africa. The best products of the Indian system are comparable to the best anywhere in the world, although of course the average product is of a poorer quality. Indeed, Indian Science and Technology personnel have assumed leadership role in areas such as statistics, chemical engineering, biochemistry, information technology, biotechnology and advanced materials are prominently visible in a number of advanced countries. Everything is not, however, fine and rosy about India’s science education system. Despite the fact that India today has the second largest education system, it has still to meet the basic needs and aspirations of its billion people. The level of illiteracy still hovers around 35%. The access to science education is on the average around 30%. There is much to be desired in relation to the quality and relevance of higher science education. Fortunately, India has recognized too well that only by competing successfully in the globally interdependent economy through its Science and Technology human power that the living standards can be raised and the hopes of its people met. It has realized that it is through its reformed, updated and restructured higher science education and training system that the country can advance economically. After an almost explosive growth in the Science and Technology system, at the beginning of the new millennium, India is on the threshold of restructuring and updating its science education system so that the tremendous promise and creative abilities of its talented human power could enable the country to redeem its tryst with destiny.

During the last fifty years, every aspect related to science education, whether it is student enrolment, number of educational institutions, and the number of teachers has recorded ten-fold growth. As science education is a continuum, it is necessary to consider
its growth and its consequences right from the school level. Science is taught at lower secondary level as an integrated whole than as a compartmentalized discipline. Discipline-oriented teaching and learning commence at 11\textsuperscript{th} and 12\textsuperscript{th} standards corresponding to the age group 16-18 years.

1.9 PHYSICS

The word ‘Physics’ originated from the Greek word that means ‘Nature’. It thus points out to the fact that physics is the branch of science that deals with the study of Nature and Natural phenomenon.

It is a branch of science that deals with those phenomenons which are related to matter and energy. It represents an accumulative and systematic learning of the natural phenomenon related with matter and energy through a scientific method of enquiry based on some science related values and attitudes. As a matter of fact physics starts with the study of basic properties of matter and radiations and makes an effort to explain various natural phenomenon’s in terms of these properties.

1.10 IMPACT OF PHYSICS

In the present age called “age of science” knowledge of physics is essential to take up certain professional and applied courses. The knowledge of physics is essential for many courses as engineering, medicines, technology, space etc. The knowledge of physics is essential, for everybody, because of its immense value in our everyday life.

1.10.1 Interest in wonders of Physics.

Physics teaching-learning process provides more possibilities of involving children in such activities as are liked by the students. Physics teaching provides more opportunities of carrying out practical work in comparison to social sciences which are less practical in nature. Basically physics in a very interesting subject and teaching physics involves a lot of fun.
1.10.2 Help in thinking process.

Physics is one of those subjects which help in the improvement of the thinking skills in the students. This development of thinking skill takes place because of the fact that in physics students come across a large number of problems which provide them opportunities for thinking. Thus physics has an immense educational value.

1.10.3 Application in Life.

Knowledge of physics is applied in various ways in our daily life. We can look around our self we will find a very large number of electric and electronic goods which all utilise one or the other principle or law of physics. For example, Radio, T.V, Electronic watches, Washing machines, mixers and juicers, computers etc., thus physics has a utilitarian value in life.

1.10.4 Development of Intellectual Honesty.

The study of physics not only improves the academic knowledge of the student but also develops an intellectual honesty in the student. Since it is a subject which involves a lot of practical work so the students acquire the habit of making reports without bias and thus it develops in them the habit of intellectual honesty.

1.10.5 Helps Develop Positive Attitude.

A proper teaching of physics develops in the student not only the scientific attitude and scientific temper but also certain positive attitudes such as open mindedness, unbiased thinking, power of reasoning etc.

1.10.6 Satisfaction of Curiosity and Creativity.

Physics is a highly activity oriented subject and these activities taken up by the students in learning physics help a lot to satisfy the basic human desire of knowledge about the wonders of nature. It helps develop a creative thinking in them.
1.10.7 Insight into Scientific Processes.

Students learn a lot knowledge by the study of physics and this knowledge becomes a very valuable tool for him in acquisition of new knowledge. Most of the knowledge of physics is gained by student while passing through various steps of acquisition of scientific knowledge i.e. statement of problem, performance of experiments, developing a hypothesis and testing the hypothesis. Thus we get an insight into the scientific process.

1.10.8 Trains for adjustment in modern life.

The present day life as pointed out earlier is highly dependent on various instruments, appliances which are based on one or the other principle of physics. To work with these appliances and to make a proper use of these a basic knowledge of physics is essential for every one of us. It is only such knowledge of physics that will make us less dependent on others for proper functioning of these items of daily use.

1.10.9 Development of social skills.

The discoveries of physics are telephone, Fax, Telex etc. can be attributed to the knowledge of certain branch of physics. All such discoveries which have made the comfortable life have decreased the distance between nations and thus they have provided the basis for a corporate living, co-existence and better human relations. All these lead to development of social standards both in personal and professional life.

1.10.10 Vocational value.

Like any other field of knowledge, knowledge of physics forms the basis of some vocational and professional courses.

1.11 PHYSICS TEACHING

The purpose of physics teaching in secondary schools is to enable students to grasp systematically the basic knowledge of physics needed for the further study of modern science and technology and to understand its applications. In addition it should
help students to acquire experiment skills, develop the ability to think and use mathematics to solve physical problems, cultivate a dialectical materialistic view point and make them aware of the need to study hard and to struggle for modernisation, along socialist lines, of industry, agriculture, national defence and science and technology.

1.12 LEARNING
Learning is acquiring new knowledge, behaviours, skills, values or preferences. It may involve processing different types of information. Learning functions can be performed by different brain learning processes, which depend on the mental capacities of Learning subject/agent, the type of knowledge which has to be acquitted, as well as on socio-cognitive and environmental circumstances.

1.13 LEARNING STYLES
Prefer the styles of learning for student. Preferred way in which individuals interact or process new information across the three domains of learning identified in the taxonomy of education objectives like cognitive (knowledge), psychomotor (skills) and affective (attitude). An individual’s preferred learning styles is how he/she learns best.

The various preferences and methods employed by learners in the process of learning. It refers to an individual's preferred manner of processing material, or characteristic styles of acquiring and using information when learning. Learning styles can be loosely grouped into physical and cognitive styles.

Learning styles are defined as “a certain specified pattern of behaviour and/or performance, according to which the individual takes in new information and develops new skills, and the process by which the individual retains new information or new skills”

Learning styles are characterized as how people acquire and understand new knowledge and skills. Thus a student’s learning styles is closely related to his or her cognitive styles, which is the way in which students actually process and retain the
information about that new skill or knowledge they are given. Students will generally have trouble processing information in one way and trying to learn or be assessed on that information in a method that is uncomfortable for them. “When a teaching style doesn’t meet the needs of particular learning styles, not much learning takes place”.

1.14 DEFINITIONS OF LEARNING STYLES

Keefe (1987) defines styles as “characteristics, cognitive, affective and physiological behaviours that serve as relatively stable indicators of how learners perceive, interact with and respond to the learning environment”.

Every person has “a consistent way of responding to and using stimuli in the context of learning” (Claxton & Rabston 1978) which is created by individual’s background. Styles is said to be “the most important concept to demand attention in education in many years (and) it is at the core of what it means to a person” (Guild & Garger, 1985).

Dunn (1992) described learning styles as “the way each learner begins to concentrate, process, and retain new and difficult information”. Dunn also highlighted that “To identify and assess a person’s learning styles it is important to examine each individual’s multidimensional characteristics in order to determine what will most likely trigger each student’s concentration, maintain it, respond to his or her natural processing styles, and cause long-term memory”.

Learning Styles can be classified into three broad categories, learning styles in terms of cognitive processes, learning styles in terms of characteristics learning behaviour patterns and learning styles in terms of both cognitive processes and learning behaviours.

1.15 FAMILIES OF LEARNING STYLES

Families of Learning Styles followed by many theorists are given in fig 1.2, the first styles is (i) constitutionally based including the four modalities: VAKT, Dunn and Dunn and Gregore (1978) took this for in-depth evaluation. The second one is (ii)
cognitive structure; including ‘patterns of ability’ though number of theorists took this family for evaluation. Riding chose it for in-depth evaluation. The third one in the family is (iii) stable personality type which the theorists who took it for the in-depth evaluation are Apter, Jackson Myers-Briggs (1976). The fourth group in the family is (iv) flexibly stable learning preferences, a large number of theorists done in-depth evaluation they are Allinson and Hayes (1996) Herrman (1943) Honey and Mumford (1963) Kolb (1939). The fifth and the final styles in the family is (v) learning approaches, strategies, orientations and conceptions of learning Entwistle, Sternberg and Vermunt were the theories that have done in-depth evaluation on that family of learning styles.

When analyzing the families of Learning Styles it could be noticed that in the beginning the styles covers the perceptual areas namely Visual, Auditory, Kinesthetic and tactile. Then comes cognitive structure based styles, then follows stable personality type. The styles shifts to flexibly stable learning preferences and finally the styles move on to learning approaches, strategies, orientations and conceptions of learning.
Fig. 1.1 Flow diagram shows the Families of Learning Styles

Learning styles and preferences are largely constitutionally based including the four modalities: VAKT

Dunn and Dunn Gregore

Learning styles reflect deep-seated features of the cognitive structures, including ‘patterns of ability’

Riding

Learning styles are one component of a relatively stable personality type

Apter, Jackson
Myers-Briggs

Learning styles and flexible stable learning

Allinson and Hayers
Herrman, Honey and Mumford, Kolb

Move on from learning styles to learning approaches, strategies, orientation and conceptions of learning

Entwistle, Sternberg, Vermunt
1.16 ELEMENTS OF LEARNING STYLES FROM THE DUNN AND DUNN MODEL

Table 1.1 Elements of Learning Styles from the Dunn and Dunn model

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<th>1. Environmental</th>
<th>2. Sociological</th>
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<td>Noise level</td>
<td>Learning groups</td>
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<td>Lighting</td>
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<td>Temperature</td>
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<td>Design</td>
<td>Motivation from adults</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Emotional</th>
<th>4. Physical modality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>Preferences</td>
</tr>
<tr>
<td>Responsibility</td>
<td>Intake</td>
</tr>
<tr>
<td>Persistence</td>
<td>Time of day</td>
</tr>
<tr>
<td>Needs for structure</td>
<td>Mobility</td>
</tr>
</tbody>
</table>

From the above table it is obvious that the major elements of Learning Styles from the Dunn and Dunn model are (i) Environmental, (ii) Sociological, (iii) Emotional, (iv) Physical modality. Each element contains some components. Physical modality includes preferences, intake, time of day, mobility as its component. The first component ‘preferences’ refer to the choice of the Learning Styles Visual, Auditory and Kinesthetic (VAK).

Table 1.2 Physical modality preferences in the Dunn and Dunn Learning Styles Model

<table>
<thead>
<tr>
<th>Auditory</th>
<th>Visual</th>
<th>Tactile</th>
<th>Kinesthetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening</td>
<td>Reading</td>
<td>Use their hands</td>
<td>Whole body movement</td>
</tr>
<tr>
<td>Lecture</td>
<td>Print</td>
<td>Underline</td>
<td>Real-life experiences/ Visiting,</td>
</tr>
<tr>
<td>Discussion recording</td>
<td>Diagrams</td>
<td>Take notes</td>
<td>Total involvement</td>
</tr>
<tr>
<td>Recording</td>
<td>Recall</td>
<td></td>
<td>Acting/drama/puppetry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Building/ designing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Interviewing playing</td>
</tr>
</tbody>
</table>
1.17 KOLB LEARNING STYLES DEFINITIONS AND DESCRIPTIONS

Knowing a person's Learning Styles enables learning to be orientated according to the preferred method. That said, everyone responds to and needs the stimulus of all types of Learning Styles to one extent or another - it's a matter of using emphasis that fits best with the given situation and a person's learning styles preferences.

1.17.1 Diverging (feeling and watching) - These people are able to look at things from different perspectives. They are sensitive. They prefer to watch rather than do, tending to gather information and use imagination to solve problems. They are best at viewing concrete situations several different viewpoints. Kolb called this styles 'Diverging' because these people perform better in situations that require ideas-generation, for example, brainstorming. People with a Diverging learning styles have broad cultural interests and like to gather information. They are interested in people, tend to be imaginative and emotional, and tend to be strong in the arts. People with the Diverging styles prefer to work in groups, to listen with an open mind and to receive personal feedback.

1.17.2 Assimilating (watching and thinking) - The Assimilating learning preference is for a concise, logical approach. Ideas and concepts are more important than people. These people require good clear explanation rather than practical opportunity. They excel at understanding wide-ranging information and organizing it a clear logical format. People with assimilating learning styles are less focused on people and more interested in ideas and abstract concepts. People with these styles are more attracted to logically sound theories than approaches based on practical value. These learning styles people are important for effectiveness in information and science careers. In formal learning situations, people with these styles prefer readings, lectures, exploring analytical models, and having time to think things through.

1.17.3 Converging (doing and thinking) - People with a converging learning styles can solve problems and will use their learning to find solutions to practical issues. They prefer technical tasks, and are less concerned with people and interpersonal aspects.
People with a Converging learning styles are best at finding practical uses for ideas and theories. They can solve problems and make decisions by finding solutions to questions and problems. People with a Converging learning styles are more attracted to technical tasks and problems than social or interpersonal issues. A Converging learning styles enables specialist and technology abilities. People with a Converging styles like to experiment with new ideas, to simulate, and to work with practical applications.

1.17.4 Accommodating (doing and feeling) - The Accommodating learning styles is 'hands-on', and relies on intuition rather than logic. These people use other people's analysis, and prefer to take a practical, experiential approach. They are attracted to new challenges and experiences, and to carrying out plans. They commonly act on 'gut' instinct rather than logical analysis. People with an Accommodating learning styles will tend to rely on others for information than carry out their own analysis. This learning style is prevalent and useful in roles requiring action and initiative. People with an Accommodating learning styles prefer to work in teams to complete tasks. They set targets and actively work in the field trying different ways to achieve an objective.

1.18 VAK -LEARNING STYLES

Educationists Rousseau, Pestalozzi, Froebel and Montessory were all on the opinion and stressed that senses are the gateways to knowledge. Maria Montessory recommended sensory exercise in education. Exercise in practical life, sense training exercise, and didactic exercise are practiced in the school established by Montessory, which was named as ‘Children’s Home’.

VAK learning styles is the ‘preferences’ comes under one of the elements ‘Physical Modality’ in Dunn and Dunn model. Senses play an important role in learning. Psychologists use the term ‘perception’ to denote this process, which stems from stimulation. Sense organs are considered to be the doorways of acquiring knowledge. Sensory/ perceptual learning styles is the preferences which the learner opted for receiving information assimilate the content and keep it in memory for their use in future. The perceptual areas are 1. Visual, 2. Auditory, 3. Kinesthetic.
1.18.1 Visual Learners

Visual learners learn through seeing, they need to see the teacher’s body language and facial expression to fully understand the content of a lesson. They take numerous detailed notes while listening to a lecture. They tend to sit in the front row in the classroom. They look very tidy and are usually neat and clean which pleases to the eye. They often close their eyes to visualize or remember something while recollecting. During their leisure time they spend time in watching something like photo album paintings, sceneries etc. visual learners like to see what they are learning for instance printed materials. They would be attracted from illustrations and presentations that depicts colour. Usually, they are attracted to written or spoken language rich in imagery since, it enhances visual taste. They prefer stimuli to be isolated from auditory and kinesthetic distraction and to find passive surroundings ideal for their liking.

1.18.2 Auditory Learners

Auditory learners learn through listening, they learn best through verbal lectures, discussions; talking things through and listening to what others have to say, prefer to sit where they can hear but needn’t pay attention to what is happening in front of them. They may not coordinate colors of clothes, but can explain why they are wearing, what they are wearing and why for. They like to spend time in hearing music hum of talk to themselves or others when bored at. They usually remember by verbalizing lessons to themselves. They have difficulty in reading maps or diagrams of handling conceptual assignments like mathematics.

1.18.3 Kinesthetic Learners

Kinesthetic learners learn through, moving, doing and touching, kinesthetic persons learn best through a hands-on approach, actively exploring the physical world around them. They may find it hard to sit still for long periods and may become distracted by their need for activity and exploration. Most of the time needs to be active and take frequent breaks while doing works. Usually, speak with their hands and with gestures (body language). They used to remember what was done, but have difficulty in recalling what was said are seen. Often find reasons to thinker or move when board.
Usually, rely on what they can directly experiences or perform i.e. they are in need of personal experiences. Activities such as cooking, construction, engineering and art help them perceive and learn things. Kinesthetic styles learners used to enjoy field trips and tasks that involve manipulating materials. They like to sit near the door or someplace else where they can easily get up and move around. They are uncomfortable in classrooms where they lack opportunities for hands-on experiences, for example listening to lectures. They communicate by touching and appreciate physically expressed encouragement, such as a pat on the back or touch, which helps greatly in handling young children.

Realizing the major significance of the learning styles in teaching - learning processes a number of researches have been conducted on learning styles in the field of education to explore the relationship with many socio-psychological variables. Several psychologists (Riessman, 1964; Dembo, 1977; Dunn and Dunn, 1978) have strong assertion regarding the potential of learning styles for academic success. They hold that learning styles can make a considerable difference in academic performance. Understanding of learning styles and matching between styles and provisions will be very useful for teachers. This will enable them to employ in their ways of teaching that would better suits students’ styles of learning by capitalize upon their strength and take steps to strengthen it through the task they prefer and understand the learning difficulties of the pupils in the class room if it is the reason based on the learning styles they prefer. The knowledge of learning styles is very much indispensable for the teachers in order to strengthen the learning process of the children of the children at the school level.

1.19 FACTORS AFFECTING LEARNING STYLES

There are several factors that can influence a student’s learning styles. They are:

- Environment
- Personality
- Genetics
- Developmental
The environment can affect all learning styles to some degree. If the room is too hot or too cold, or if there is outside noise making it difficult to concentrate or hear, all learning will be affected. However, some learners may be more affected than others. These learners may strain to hear you, may begin fidgeting in their seats, or may just tune out because it is too much work to try and stay focused with all of the environmental barriers.

A student’s personality can also have some bearing on his or her preferred learning styles. A normally outgoing person may need to engage in group activities so that they feel they had a chance to discuss the learning. More reserved people may resist group activities and prefer to work alone. Rita Dunn (1990) says that 3/5 of your learning styles is determined by genetics. So the combination of learning styles of your parents will partially determine your learning styles. The other 2/5 is determined by outside factors (Sarasin).

1.20 SCHOOL CLIMATE

School climate, the focus of this is evident in the feelings and attitudes about a school expressed by students, teachers, staff and parents -the way students and staffs “feel” about being at school each day.

School climate is a term that is used often by educators, researchers, and the media but is rarely defined consistently. "The physical and psychological aspects of the school that provide the preconditions necessary for teaching and learning to take place".

"School climate refers to the quality and character of school life. It is based on patterns of school life experiences and reflects norms, goals, values, interpersonal relationships, teaching, learning and leadership practices, and organizational structures" School climate is defined as organizational characteristics that are persistent in and unique to a particular school (Hoy, Tarter, & Bliss, 1990; Tagiuri & Litwin, 1968). The term has been used interchangeably with others such as school culture, school
atmosphere, school environment, learning environment, sense of community, and academic climate (Hoy & Hannum, 1997).

Moos (1979) defines school climate as the social atmosphere of a setting or "learning environment” in which students have different experiences, depending upon the protocols set up by the teachers and administrators. Moos divide social environments into three categories:

- **Relationship**, which includes involvement, affiliation with others in the classroom, and teacher support.
- **Personal growth or goal orientation**, which includes the personal development and self-enhancement of all members of the environment.
- **System maintenance and system change**, which includes the orderliness of the environment, the clarity of the rules, and the strictness of the teacher in enforcing the rules.

Moos suggested that "although the specific types of educational environments needed depend in part on the types of people in them and on the outcomes desired. [at least] we need to focus on relationship, personal growth, and system maintenance and change dimensions in describing, comparing, evaluating, and changing educational settings."

With regard to family involvement, this definition of climate indicates that schools with positive climates do the following:

- Allow families to participate and develop relationships with the faculty and staff as well as with other families.
- Contribute to the personal growth of families in terms of their knowledge of child development and parenting skills as well as their own self-esteem.
- Encourage families to have a say and be an integral part of decision making on issues affecting their children's education.
1.21 DESCRIPTION OF SCHOOL CLIMATE

School climate refers to the sum of the values, cultures, safety practices, and organizational structures within a school that cause it to function and react in particular ways. Climate encompasses the physical attributes of a school as well as levels of order, satisfaction, and productivity. It includes how students, staff, and community interact and what approaches are used to solve school problems. Climate reflects whether students and families feel they belong at the school and how school rules are determined, expressed, understood, and enforced.

1.22 POSITIVE SCHOOL CLIMATES

Positive school climate is associated with well-managed classrooms and common areas, high and clearly stated expectations concerning individual responsibility, feeling safe at school, and teachers and staff that consistently acknowledge all students and fairly address their behaviour.

School Climate creates the norms and values of the school, which then influence teaching and learning programs and practices within a school and, ultimately, a variety of outcomes for school community.

In other words, when students, in partnership with educators and parents, work to improve school climate they promote essential learning skills (e.g. creativity and innovation skills, critical thinking and problem solving skills, communication and collaborative skills) as well as life and career skills (e.g. flexibility and adaptability, initiative, social and cross culture skills, productivity and accountability, leadership and responsibility) that provide the foundation for 21st century learning.

A sustainable, positive school climate fosters youth development and learning necessary for a productive, contributing and satisfying life in a democratic society. This climate includes:

- Norms, values and expectations that support people feeling socially, emotionally and physically safe.
• People are engaged and respected.
• Students, families and educators work together to develop, live and contribute to a shared school vision.
• Educator’s model and nurture attitudes that emphasize the benefits and satisfaction gained from learning.
• Each person contributes to the operations of the school and the care of the physical environment.

1.23 RESEARCH AND POLICY IN SCHOOL CLIMATE

This critical gap in research and policy in terms of school climate is a result of several problems:

a) The first major problem is inconsistency and inaccuracy in terms of school climate definition.

b) Second, while there are superior options, state policymakers have made poor choices in terms of school climate measurement at the state level.

c) The third problem is a lack of defined climate-related leadership at the state level.

d) Fourth, many states continue to isolate school climate policy in health, special education and school safety arenas, without integrating it into school accountability policies, or the beliefs of the community at large.

e) Finally, many states have not yet created quality or improvement standards, which can easily link data to improvement plans and technical assistance.

School climate promotes or complicates- students’ ability to learn and achieve academically. This is common sense. To the extent that students feel safe, cared for, appropriately supported and lovingly “pushed” to learn, academic achievement should increase positive school climate is directly related to academic achievement.

A positive school climate is an environment where learning and achievement can take root and grow. The foundation for a positive school climate rests on the integration of academic and behaviour approaches that address the student as a whole person. Instructional practices teach to the standards and are culturally relevant. Curriculum and
instruction engages students by providing personal meaning for them. Behaviour is approached positively, with an emphasis on prevention. There are clear, positive expectations and behaviour supports to increase academic achievement. There are systems in place to assure that continuums of strategies are used to match the need of the students. Adults have high expectations and team effectively with colleagues to help students achieve at their maximum level. The environment welcomes and values all cultural and racial groups, and staff view difference as strength upon which to build.

Students will learn more and achieve at higher levels when:

- Data drives decision-making
- Students are engaged
- School buildings are safe
- Staff and students are culturally competent
- Families and the community are involved
- School systems support instruction

1.24 COMPONENTS OF SCHOOL CLIMATE

Although there is no consistent agreement in the literature on the components of school climate or their importance, most writers emphasize caring as a core element. However, some place safety foremost, defining school climate as “an orderly environment in which the school family feels valued and able to pursue the school’s mission free from concerns about disruptions and safety.”

Several aspects of a school’s physical and social environment comprise its climate. One organization identified the following eight areas:

- Appearance and physical plant
- Faculty relations
- Student interactions
- Leadership/decision making
- Disciplined environment
● Learning environment
● Attitude and culture
● School-community relations.

The comprehensive view used defines school climate in terms of four aspects of the school environment:

● A physical environment that is welcoming and conducive to learning
● A social environment that promotes communication and interaction
● An affective environment that promotes a sense of belonging and self-esteem
● An academic environment that promotes learning and self-fulfilment.

1.25 SCHOOL CLIMATE ASSUMPTIONS

School climate is grounded in people’s experience of school life - socially, emotionally, ethically and civically as well as academically. Hence, school climate assessment and improvement efforts need to explicitly recognize and address the social, emotional, ethical and civic as well as academic dimensions of school life. Meaningful ongoing social, emotional, ethical and civic as well as cognitive learning by district and school administrators, teachers and other staff is foundational to effective and sustained school climate improvement efforts.

Evidence-based school climate assessment and improvement efforts involve a specific and unique body of knowledge, practice and attitudes, which must be included in the curricula of prospective teachers, school-based mental health professionals and school administrators. Professionals who educate teachers, school based mental health professionals and school administrators must have experience with evaluating and improving school and classroom climate.

Due to the complex nature of school climate problems that need to be addressed, school-home community partnerships and educator-mental health professional partnerships are essential. Data-driven school climate improvement systems need to
recognize and track pro-social behaviour as well as barriers to school climate improvement efforts.

Effective school climate improvement efforts model a democratic process and provide extraordinary opportunities for all members of the school community to learn and practice skills and dispositions that provide the necessary foundation for active and ongoing citizenship. Effective school climate needs to be a central characteristic of school accountability and assessment systems.

State departments of education have a responsibility to provide leadership for schools to understand the principles and characteristics of effective school climate. School climate needs to be an integral component of quality education systems, practices and professional development, thus ensuring sustainability and leadership.

Effective school climate does not happen in a vacuum, isolated from the community climate and support.

1.26 ASSESSING SCHOOL CLIMATE

Measuring student achievement is fairly straight-forward. State standardized tests and regular benchmark tests are routinely scored, disaggregated, and analyzed to provide a picture of how well students have mastered subject matter. On the other hand, assessing school climate can require a review of multiple data sources. Some potential data sources include:

1.26.1. Perception Surveys

It gathers data on how teachers, students, and parents feel about their school. Perception surveys can assess the extent to which the school’s climate is viewed positively by students, parents, and faculty. Survey data can be used to call attention to areas of weakness and can complement other, more specific or objective school climate data. Survey data also can offer information on how the community perceives the school; if students believe the school is safe and meeting their needs; and/or if parents, students,
and teachers have a sense of pride in the school. Survey data often reveal perceptions about the school administration that can assist principals in reflecting on their own practice.

1.26.2. Student Discipline Records

Student Discipline Records such as office referrals, suspension records, and expulsion records can provide useful information on school climate, especially if the data are detailed. These records can provide information on the number of students referred for discipline; whether any one subgroup is disproportionately referred for discipline, suspended, or expelled; and if frequent offenders may benefit from more intensive support or intervention. Student discipline records also can supply data about which rules are most frequently violated and which teachers most frequently refer students. These data can help inform the identification of research–based strategies to improve the school climate.

1.26.3. Attendance Records

It can reveal tardy and absentee patterns by subgroup, season, teacher, or subject. These data can inform educators about which students may need additional support to attend school regularly. Records regarding participation in extracurricular activities and school wide activities can show whether students are broadly represented or whether activities tend to be limited to a small subgroup of students. Student attendance and participation in school activities also may provide important indicators of the school climate.

1.26.4. School Climate and Performance

Numerous studies and document reveals those students in schools with a better school climate have higher achievement and better socio emotional health. Probably the most comprehensive work in this area is being done by the Search Institute, a non-profit organization that encourages schools and communities to develop and empower young people.
1.26.5. School Climate Focused on Academic Achievement

When students feel safe, connected and engaged in their schools, they are more successful and effective learners, and exhibit fewer risk behaviours. Students are more likely to perform at high levels in a school environment in which they feel physically and emotionally safe and supported, and which communicates high expectations for achievement. A school improvement plan can promote school policies that will encourage learning in an atmosphere of connectedness and caring. Schools that are effective in promoting such learning environments are driven by a clear code of conduct that is enforced fairly, consistently, and equitably across all demographic groups.

Bliss (1991) identified a number of variables relevant to student achievement. Although variables differ from researcher to researcher, there is a common core group of variables relevant to student achievement: climate, leadership, expectations, frequent monitoring of instruction, parent and community involvement, and instruction. Climate as it is referred to in effective schools research frequently deals with the area of discipline, order, and safety.

Some programme aim to improve student behaviour and attitudes, while others focus more explicitly on improved academic performance as an outcome. Whichever strategies the plan includes, the intended outcomes should be articulated, clearly communicated, and directly linked to specific measures (e.g. increased attendance, reduced suspensions, and demonstration of skills).

1.27 ACADEMIC ACHIEVEMENT

Academic achievement of the learners remains the fulcrum of the whole Indian education system. Achievement is the performance of the learner in the school or college in a regular series of educational tests. The term “achievement” is used more generally to describe the performance in the subjects of the curriculum. It is a broader term and related to the accomplishment of principles and generalizations and the capability to perform efficiently certain manipulation, objectives, symbols and ideas. The dimension of academic achievement has been largely confined to the evaluation in terms of
information, knowledge and understanding. Though learning process need to include all
the behaviours of the three domains namely cognitive, affective and psychomotor
domain, only the cognitive aspect of the behavioural outcome alone have a chance to put
into test in our educational process. It is clear at this moment that the affective and
psychomotor domains are not sufficiently exposed and the achievement is constrained to
the performance of cognitive domain alone.

Educational achievement is usually defined in three ways (1) The grades the
students earn in school, (2) their performance and standardized tests of academic
achievement, (3) the number of years of schooling completed - (Sternberg 1985).

According to Chapline J.P. (1968) “Achievement” is defined as the specified level
of attainment or proficiency in academic work as evaluated by the teachers or
standardized tests (or) combination of both. Henry Garrat (1967) defines it as,
“Achievement means actual performance often used in reference to scores on educational
tests to school grades”. Rao (1964) included life goals, aspiration, study habits, emotional
factors, personal and social adjustments as contributors for academic achievement.

In the early 1940’s Wechsler presented the idea of “non-intellective” and
“intellective’ factors. He also proposed that “non-intellective” factors such as affective,
personal, social factors were essential for predicting one’s aptitude or achievement.

Academic achievement or (academic) performance is the outcome of education
the extent to which a student, teacher or institution has achieved their educational or
continuous assessment but there is no general agreement on how it is best tested or which
aspects are most important-procedural knowledge such as skills or declarative knowledge
such as facts. It is universally accepted that the acquisition of factual data is not an end in
itself but an individual who was received ‘education’ should show the evidence of having
understood it. But for obvious reasons, the tests and examination are largely used to
measure the amount of information, which the students have acquired. Attainment of
academic excellence by the students remains the major goal of school, educational
institution at any level. Achievement is something which is to be measured beyond mere pen and paper test. From the various definitions and assumptions it could be predicted that achievement aspires beyond the grades and marks one attain academically. Academic achievement has become an index of a student’s future in this highly competitive world, but the fact is, it is only a drop in the vast sea of education. A great many students seem not to get credit appropriate with their known abilities. Many a time, we often find students with average outshine in their life. The mysterious facts which have come into attention are that in spite of having similar educational facilities, environment, objectives and even intelligence, academic achievement of students differs from one another.

Wechsler notion of intelligence is “the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with environments”. These capacities contribute much to the academic performance of the students’ and result greatly in their academic achievements.

1.28 NEED AND SIGNIFICANCE OF THE STUDY

School is the safest place and the teachers are the persons who could ensure that safety over there. This was conceptualized previously by Frobel’s as ‘school’ is an essential social institution. He regarded school as a miniature society where children get training in important things of life. They learn the virtues of co-operation, sympathy, fellow-feeling and responsibility, etc. Froebel conceived the school as garden, the teacher as a gardener and the students as tender plants. Here it is worth mentioning the dictum, “if one school door is opened thousand doors of a prison would be closed”.

The National Curriculum Framework for School Education (NCFSE 2000) makes critical remark, that schools across the country are obsessed without basic infrastructure and good school climate. All efforts taken in the field of education in learning process are concentrated on cognitive skills alone. This limited focus on the cognitive to the total disregard of the affective aspect in the learning process has long been recognized as a pedagogic aberration. Many strategies implemented by the state government became additional benefit in improving children’s cognitive skills. But the affective domain of children remains unattended and not satisfactory. Corporal punishment, teacher
misbehaviour in the classroom, teachers with alcoholic consumption during class hours, sexual abuse, children’s suicide rates and lack of basic infrastructure like water, restroom, laboratory, and classroom are on the increase not only in private schools but also in government schools. The studies on dropout expose that about 10% is because of corporal punishment. The National Curriculum Framework for School Education (NCFSE 2000) makes a critical remark, Learning should be an enjoyable act where children should feel that they are valued and their voices are heard. The curriculum structure and school should be designed to make school a satisfactory place for students to feel secure and valued. Pedagogy of learning sciences should be designed to address the aims of learning science is to learn the facts and principles of science and its applications, consistent with the stage of cognitive development. To acquire skills and understand the methods and processes that lead to generation and validation of scientific knowledge. To develop a historical and developmental perspective of science and to enable them to view science as a social enterprise. To relate the, local as well as global, and appreciate the issues at the interface of science, technology and society. To acquire the requisite theoretical knowledge, practical and technological skills to enter the world of work. To nurture the natural curiosity, aesthetic sense and creativity in science and technology. To imbibe the values of honesty, integrity, cooperation, concern for life and preservation of environment and to cultivate 'scientific temper'-objectivity, critical thinking and freedom from fear and prejudice.

Physical environment has to be maintained favourable to students in terms of infrastructure, adequate light and ventilation, student teacher ratio, hygiene and safe environment. Schools should also treat students with equality, justice respect, dignity and right of the students. Give equal opportunities for all students to participate in all activities without any bias. Policy of inclusion has to be part of the school where differently able and children from marginalized section get equal opportunities. The schools should also be well equipped with libraries, laboratories and educational technology laboratories.

Many people recognize that each person prefers different learning styles and techniques. Learning styles group common ways that people learn. Everyone has a mix of
learning styles. Some people may find that they have dominant styles of learning, with far less use of the other styles. Others may find that they use different styles in different circumstances.

Creating a healthy school environment for students begins by supporting healthy relationships among the staff. Healthy relationships produce a climate conducive to honesty, open communication, and risk-taking. In a true learning community, cooperative learning and mutual respect are expected of faculty as well as students. Establishing a supportive school environment increases self-esteem and achievement.

An inclusive environment ensures that all students, regardless of race, disability, strengths, or weaknesses, are significantly involved in the school community. Middle schools thrive as they connect all constituents to a belief in and thirsting for success at their school. Building a sense of community makes students more apt to share perspectives of their teachers, ultimately leading to increased academic achievement. The overall school climate is enhanced by positive behaviour and attitudes of students and teachers.

Developing a productive environment conducive for learning involves establishing a school atmosphere that promotes cooperation, trust, loyalty, openness, pride, and commitment. School climate is also associated with academic achievement, faculty morale, and student behaviour.

An effective school establishes a climate that cultivates respectful and supportive relationships. Close, trusting relationships with adults and peers create a climate that supports personal and academic growth. The school environment must be structured in a manner that supports teachers developing meaningful relationships with each student. Adult mentors provide individualized support to assist students in establishing goals, planning areas of study, and involving parents in the process. Students are content in schools where they feel justly treated, safe, and supported by teachers.
One of the most important things to understand about learning styles is that they are developmental in nature. Learning styles changes over time, based on experiences and level of education.

Manor (1987) stated, "Because the school is a very powerful agent in the process of socialization and development of the future citizen in society, the importance of both school environment and the school congruence with their students’ needs are very important issues for further research. Gersser and Wolf Jr. (1983) referred to the need to question adolescents about their views on school and teachers. The importance of considering student perceptions of school was also expressed by Genn (1984), and Deer, Maxwell and Relich (1986). Student perceptions of schools can provide interesting insights into school climate as perceived by adolescents. Since students are, ultimately, the focus of the educational process, this research provided additional insight into both their needs and their perceptions of the institutions in which education is meant to take place.

Learning is a natural process and human beings have an innate or natural capacity to learn. The level of learning is one of the most important factors which indicate the success of Learning Environment. Lack of effective learning strategies and ignorance of the Student’s Learning Styles and School Climate may lead to academic underachievement. Learners having different Learning Styles preferences would behave differently in the way they perceive interact and respond to the same environment. It will be important for teachers to examine the various styles in their students learning styles and also creating a healthy School Environment for students by supporting healthy relationships among the learners. Hence by considering the above three variables would have close relationship among themselves so, the investigator wanted to find out the relationship among these suitable variables.

1.29 STATEMENT OF THE PROBLEM

“A school is a place where one learns about the totality, the wholeness of life. Academic excellence is absolutely necessary, but a school includes much more than that.
It is a place where both the teacher and the student explore, not only the outer world, the world of knowledge, but also their own thinking, their own behaviour”-J.Krishnamurthi.

According to the Kothari Commission, “the destiny of India is being shaped in the classrooms”. School climate may be one of the most important ingredients of a successful instructional program. Without a climate that creates a harmonious and well-functioning school, a high degree of academic achievement is difficult, if not downright impossible to obtain. So it is important that the School climate, the focus of this is evident in the feelings and attitudes about a school expressed by students, staff and parents the way students and staff “feel” about being at school each day. The Learning Styles and School Climate make students to perform higher than other students on Academic Achievement. It provides additional support for instruction at all levels of the educational progress. It increases in explicit presentation of Learning styles positively influence students. Hence, as an attempt to make aware of the educators, the present study is intended to investigate the relations of, “A Study on Learning Styles, School Climate and Academic Achievement in Physics among Higher Secondary Students in Ariyalur District.”

1.30 OPERATIONAL DEFINITIONS

The selected topic of the research is “A study on Learning Styles, School Climate and Academic achievement in Physics among Higher Secondary Students in Ariyalur District”. The operational definitions of the key terms are given below along with dictionary meaning. The important terms in the statement of the problem are Learning Styles, School Climate, Academic Achievement, Physics and Higher secondary students.

**Learning Styles-** Dictionary Definition

Learning styles are different ways that a person can learn. It’s commonly believed that most people favour some particular method of interacting with, taking in, and processing stimuli or information.

Learning styles are characterized as how people acquire and understand new knowledge and skills. Thus a student’s learning styles is closely related to his or her cognitive styles, which is the way in which students actually process and retain the
information about that new skill or knowledge they are given. Students will generally have trouble processing information in one way and trying to learn or be assessed on that information in a method that is uncomfortable for them.

**Learning Styles - Operational Definition**

In this study Learning Styles refers the perceptual Learning Styles of Visual, Auditory and Kinesthetic (VAK) is taken into account.

**School Climate - Dictionary Definition**

School Climate refers to the quality and character of school life. It is based on patterns of school life experiences and reflects norms, goals, values, interpersonal relationships, teaching, learning, leadership practices, organizational structures and attitudes of staff and students in school. School Climate is associated with well-managed classrooms and common areas, high and clearly stated expectations concerning individual responsibility, feeling safe at school, and teachers and staff that consistently acknowledge all students and fairly address their behaviour.

**School Climate - Operational Definition**

In the present study School Climate is considered to be the whole School Environment.

**Academic Achievements - Dictionary Definition**

Academic Achievement is the outcome of education, the extent to which a student has achieved their educational goals. Academic Achievement is often measured by performance on standard tests. Educational attainment presents the level of total education received by an individual. Academic Achievement approach is an integral component of a total educational plan rather than as an ancillary. It is defined as the knowledge and skills that an individual learns through direct instruction.

**Academic Achievements - Operational Definition**

Academic Achievement refers to how the students learn their academic like Physics subject are found the test paper achievements. The scores of the student in the
physics test conducted by the researcher are taken into account for the measurement of Academic performance of students.

**Physics** - Operational Definition

“Knowledge of nature is the nature science that involves the study of matter and its motion through space and time, along with related concepts such as energy and force. Physics is the academic subject studied by Higher Secondary Students studying schools in India.

**Higher Secondary Students** – Dictionary Definition

In Indian educational system, a student undergoes ten years of schooling. After this, a student should undergo two years of academic program in order to join the college program / degree. These two years of academic program is called Higher Secondary level. It includes XI and XII standards.

**Higher Secondary Students**- Operational Definition

In the present study, the term Higher Secondary Students refers the first year students of Higher Secondary program.

**Ariyalur District** – Operational Definition

Ariyalur District is one of the Districts in Tamilnadu, which is one of the states in India. In Ariyalur District in the year 2013-2014 there were Sixty Three Higher Secondary Schools.

**1.31 OBJECTIVES OF THE STUDY**

The following objectives were formulated for this study and listed.

1. To find out the choice in the preference of Learning Styles of Higher Secondary Students studying in various Schools in Ariyalur District.
2. To find out the School Climate of Higher Secondary Students studying in various Schools in Ariyalur District.
3. To find out the Achievement Scores of Higher Secondary Students studying in various Schools in Ariyalur District.
4. To find out whether the Learning Styles scores of Higher Secondary Students differ significantly with respect to their Gender.
5. To find out whether the Learning Styles of Higher Secondary Students with respect to their Locality of School.
6. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their different Management they studied in Higher Secondary.
7. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their Type of School which they studied in Higher Secondary.
8. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their Board of Institution.
9. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their Medium of Institution.
10. To find out whether Learning Styles of Higher Secondary Students differ significantly with respect to their Father’s Educational Qualification.
11. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their Mother’s Educational Qualification.
12. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their Father’s Occupation.
13. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their Mother’s Occupation.
14. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their Parent’s Annual Income level.
15. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their number of Siblings.
16. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their Type of Family.
17. To find out whether the Learning Styles of Higher Secondary Students differ significantly with respect to their Coaching Classes.
18. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Gender.
19. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Locality of School.
20. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their different Management they studied in Higher Secondary.
21. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Type of School which they studied in Higher Secondary.
22. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Board of Institution.
23. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Medium of Instruction.
24. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Father’s Educational Qualification.
25. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Mother’s Educational Qualification.
26. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Father’s Occupation.
27. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Mother’s Occupation.
28. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Parent’s Annual Income level.
29. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Number of Siblings.
30. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Type of Family.
31. To find out whether the School Climate of Higher Secondary Students differ significantly with respect to their Coaching Classes.
32. To find out whether the Academic Achievement of Higher Secondary Students differ significantly with Respect to their Gender.

33. To find out whether the Academic Achievement of Higher Secondary Students differs significantly with respect to their Locality of School.

34. To find out whether the Academic Achievement of Higher Secondary Students differs significantly with respect to their Different Management they studied in Higher Secondary.

35. To find out whether the Academic Achievement of Higher Secondary Students differ significantly with respect to their Type of School which they studied in Higher Secondary.

36. To find out whether the Academic Achievement of Higher Secondary Students differ significantly with respect to their Board of Institution.

37. To find out whether the Academic Achievement of Higher Secondary Students differ significantly with respect to their Medium of Instruction.

38. To find out whether the Academic Achievement of Higher Secondary Students differ significantly with respect to their Father’s Educational Qualification.

39. To find out whether the Academic Achievements of Higher Secondary Students differ significantly with respect to their Mother’s Educational Qualification.

40. To find out whether the Academic Achievement of Higher Secondary Students differs significantly with respect to their Father’s Occupation.

41. To find out whether the Academic Achievement of Higher Secondary Students differs significantly with respect to their Mother’s Occupation.

42. To find out whether the Academic Achievement of Higher Secondary Students differ significantly with respect to their Parent’s Annual Income level.

43. To find out whether the Academic Achievement of Higher Secondary Students differ significantly with respect to their Number of Siblings.

44. To find out whether Academic Achievement of Higher Secondary Students differ significantly with respect to their Type of Family.

45. To find out whether the Academic Achievement of Higher Secondary Students differs significantly with respect to their Coaching Classes.
46. To find out whether there is significant Correlation between Academic Achievement and School Climate of Higher Secondary Students.
47. To find out whether there is significant Correlation between Academic Achievement and Kinesthetic Learning Styles of Higher Secondary Students.
48. To find out whether there is significant Correlation between Academic Achievement and Auditory Learning Styles of Higher Secondary Students.
49. To find out whether there is significant Correlation between Academic Achievement and Visual Learning Styles of Higher Secondary Students.
50. To find out whether there is significant Correlation between School Climate and Kinesthetic Learning Styles of Higher Secondary Students.
51. To find out whether there is significant Correlation between School Climate and Visual Learning Styles of Higher Secondary Students.
52. To find out whether there is significant correlation between School climate and Visual Learning Styles of Higher Secondary Students.

1.32 HYPOTHESES OF THE STUDY

In order to accomplish the stipulated objectives of this study 52 null hypothesis were formulated and listed below;

1. There is no choice in the Preference of Learning Styles of Higher Secondary Students studying in various Schools in Ariyalur District.
2. There is no choice in the Preference of School Climate of Higher Secondary Students studying in various Schools in Ariyalur District.
3. There is no choice in the Preference of Achievement Scores of Higher Secondary Students studying in various Schools in Ariyalur District.
4. There is no significant difference in the Learning Styles Scores of Higher Secondary Student’s with respect to their Gender.
5. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Locality of School.
6. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their different Management they studied in Higher Secondary.
7. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Type of School which they studied in Higher Secondary.

8. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Board of Institution.

9. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Medium of Instruction.

10. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Father’s Educational Qualification.

11. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Mother’s Educational Qualification.

12. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Father’s Occupation.

13. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Mother’s Occupation.

14. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Parent’s Annual Income level.

15. There is no significant difference in the Learning Styles of Higher Secondary students with respect to their Number of Siblings.

16. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Type of Family.

17. There is no significant difference in the Learning Styles of Higher Secondary Students with respect to their Coaching Classes.

18. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Gender.

19. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Locality of School.

20. There is no significant difference in the School Climate of Higher Secondary Students with respect to their different Management they studied in Higher Secondary.
21. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Type of School which they studied in Higher Secondary.

22. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Board of Institution.

23. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Medium of Instruction.

24. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Father’s Educational Qualification.

25. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Mother’s Educational Qualification.

26. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Father’s Occupation.

27. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Mother’s Occupation.

28. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Parent’s Annual Income level.

29. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Number of Siblings.

30. There is no significant difference in the School Climate of Higher Secondary students with respect to their Type of Family.

31. There is no significant difference in the School Climate of Higher Secondary Students with respect to their Coaching Classes.

32. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Gender.

33. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Locality of School.

34. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Different Management they studied in Higher Secondary.
35. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Type of School which they studied in Higher Secondary.

36. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Board of Institution.

37. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Medium of Instruction.

38. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Father’s Educational Qualification.

39. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Mother’s Educational Qualification.

40. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Father’s Occupation.

41. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Mother’s Occupation.

42. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Parent’s Annual Income level.

43. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Number of Siblings.

44. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Type of Family.

45. There is no significant difference in the Academic Achievement of Higher Secondary Students with respect to their Coaching Classes.

46. There is no significant Correlation between Academic Achievement and School Climate of Higher Secondary Students.

47. There is no significant Correlation between Academic Achievement and Kinesthetic Learning Styles of Higher Secondary Students.

48. There is no significant Correlation between Academic Achievement and Auditory Learning Styles of Higher Secondary Students.

49. There is no significant Correlation between Academic Achievement and Visual Learning Styles of Higher Secondary Students.
50. There is no significant Correlation between School Climate and Kinesthetic Learning Styles of Higher Secondary Students.

51. There is no significant Correlation between School Climate and Visual Learning Styles of Higher Secondary Students.

52. There is no significant Correlation between School Climate and Visual Learning Styles of Higher Secondary Students.

1.33 SCOPE OF THE STUDY

National Curriculum Framework School Education (NCFSE 2000) for school education has strongly emphasized the importance of School climate. Children will learn only in an atmosphere where they feel they are valued. The association of learning with fear, discipline and stress, rather than enjoyment and satisfaction, is determine to learning. Our children need to feel that each one of them, their homes, communities are valuable as resources for experience to be analyzed and enquired into at school, that all of them have the ability and the right to learn and to access knowledge and skills and the adult society regards them as capable of the best. An enabling learning environment is one where children feel secure, where there is absence of fear and which if governed by relationships of equality and equity. Promoting a positive School Climate becomes a prime concern for schools and educational administrators.

Also, in addition to School Climate, Learning Styles point out how cognitive, affective and psychomotor skills mostly turn into permanent qualities. Senses play an important role in learning. Sensory learning or the perceptual learning styles covers the perceptual areas namely, Visual, Auditory and Kinesthetic. The introduction of Continuous and Comprehensive Evaluation (CCE) in schools of Tamil Nadu includes both scholastic and co-scholastics areas which enhances and ensures the holistic evaluation of a learner. Thus, here is an opportunity to enhance and encourage the learning their ownstyles of learning. As student they need to understand their own styles of learning. Unless otherwise they are self-aware of certain skills it would be difficult for them to nurture them to the children at the primary stage.
Academic achievement has become an index of a student’s future in this highly competitive world but the fact is it is only a drop in the vast sea of education. A great many students seem not to get credit proportionate with their known abilities. Many a time, we often find students with average abilities excel. The inexplicable facts which have come into limelight are that in spite of having similar educational facilities, environment, aspirations and even intelligence, academic achievement of students differs from one another. It clearly states the individual difference among students and mere cognition alone never helps in attaining the educational goals.

The NCF 2005 emphasized the need to provide each child with an opportunity to think, to articulate ideas and participatory activity in learning. It clarified that education is a dialogue that should invoke the agency of school as well as recognize the needs of children from diverse backgrounds. In order to make the dialogue energetic, School Climate and Learning Styles help to great extent. It is a crucial needs that School Climate as an essential element of the educational process and Learning Styles as it covers the process of Learning.

1.34 LIMITATIONS OF THE STUDY

The researcher identified the following are the limitations of the present study.

1. The study is made, involving the Higher Secondary Students studying in various Schools in Ariyalur District only.
2. Samples were collected from Ariyalur District Higher Secondary Schools only.
3. The Academic Achievement Test prepared for Physics is based on the State Board syllabi prescribed under Uniform System of School Education in Tamil Nadu.
4. The study was conducted with the 11\textsuperscript{th} standard Higher Secondary level at Ariyalur District.
5. The Investigator confined his study with only 943 samples from 20 Higher Secondary Students Schools.
6. Only 3 Tools were used to collect data, namely School Climate Inventory, Learning Styles Inventory and Academic Achievement Test in Physics.
7. The study does not cover all the Higher Secondary Students in Higher Secondary Schools.
8. The sample didn't have equal distribution of Male and Female Students.

1.35 ORGANISATION OF THE STUDY

Chapter I gives the introduction of the problem which is taken for this chapter. It also provides the background and substantiates the needs. Chapter II gives the review of related literature selected for this study. It enables researcher to identify the research gap in the area of the study and explore the possibilities of addressing them. Chapter III outlines the formulation of research design for the study. The method and procedure followed, construction and validation of tools, and data collection by the researcher has been detailed in this chapter. Chapter IV deals with analysis and interpretations of data from which the findings and conclusions are arrived. Chapter V gives summary of findings, conclusions and recommendations of this study. This provides a bird’s eye view of the introduction, review, methodology, data analysis, findings, conclusions, implication and recommendations.