INTRODUCTION
CHAPTER I
INTRODUCTION

The role of education in the economic development of society has been the subject of considerable research. Although it has been widely accepted that education plays a major role in modernization and economic development of the Nation, some evidences suggest that different types of education may have different effects and sometimes unintended consequences.

Educational research associations, among their purpose and missions, have several common functions. They all provide for the exchange of knowledge and information derived from the research and related inquiry of their members. These associations promote endeavour. They encourage, directly or indirectly, the improvement of education through a base of knowledge and information produced by educational inquiry. They also provide their members with opportunities, and other matters affecting the conduct of research and membership in the association.

Scholars have recently begun to focus systematically on the family as an educational institution. Education scholars have traditionally focused on schools, giving only passing attention to the family as an educational setting. But, scholars of sociology have typically defined education as work of schools rather than families. Although scholars have studied Psychological, Cognitive or Moral process within the family as an economic, political or cultural instrumentality and as an agency of child rearing, education has only affected in their awareness and their description of the family as an educational unit.

For the purpose of present investigation,"Education"is defined as an interactive process by means of which learning take place, sometimes informally, sometimes formally and sometimes non-formally. Matter of teaching and learning might be technical, intellectual or moral.
The national policy contains a comprehensive new definition of education. The new concept embraces all education, formal and non-formal. Non-formal is defined to include adult education, craft apprenticeship and private institutes. Education will be considered “Life long” as a basis for the Nation education and programs.

1.1 Teaching:

The word “teach” has a long history and its uses have varied from one period to another. According to its semantic derivation, to teach means to show someone something through signs or symbols: to use sign or symbols; to use sign or symbol to evoke responses about events, persons, observations, findings and so forth. A descriptive definition is stated as follows: teaching is imparting knowledge or skill. The word “Imparting” is specified by resorting to contextual usages. In one context imparting may mean to share experiences, in another it may mean communicating information by lecture (International Encyclopaedia of Teaching and Teacher Education 1987).

The main focus of teaching is to bring about a desirable change in the behaviour of learner. It is brought about by the teacher using teaching strategies to achieve his objectives. But traditionally we have been using teaching method for content presentation. In order to increase the effectiveness of the presentation, the audio-visual aids are also used.

Teaching is a difficult task. It requires different types of methods, and teaching aids. The selection of these methods and techniques depends upon the nature of content, learning objectives, learner’s abilities and students entering behaviours.

1.2 New Trends in Method of Teaching:

Education basically aims at preservation and transfer of cultures of the respective communities to their coming generations. The traditional educational
method in India could not keep pace with the changes in the peoples' individual needs and aspirations, and the developmental needs of the society in India. Most of these changes were affected directly or indirectly by the contribution of Science and Technology.

Besides method, other components are media and material. The age of Science and Technology has a great impact on educational method or teaching learning process. The influence of electronic media has brought a revolution in the field of education. Radio, Television, Video Cassettes, Tape Recorder, Computer Assisted Learning, etc. along with various models of teaching are being increasingly used in the field of education.

1.3 MODELS OF TEACHING:

A model of teaching is a pattern or plan which can be used to shape a curriculum or course, to select instructional material and to guide teacher action. Models are designed to attain specific goals. When a teacher identifies a goal, selects a particular strategy designed to attain that goal, we can say that he is using a model's approach (Joyce and Weil, 1985).

In the layman's language, "Model of Teaching" is a blue-print of teaching activities which is needed to generate educative environment within the framework of the task in hand. Models of teaching try to describe teaching as it ought to be. Psychologists are of the view that the best substitute for a theory of teaching is a model of teaching for it explains the various teaching and learning conditions and their relationship.

When we teach well, we help students learn well. A Model of teaching helps learning. Powerful learners have repertoires of powerful strategies for acquiring education.

Models of teaching are designed to impart repertoires while helping students
learn information, ideas, academic skills, developing social skills, values and understand themselves and their environments," Bruce Joyce and Marshal Weil(1990).

1.4 Advance Organiser Model :

Ausubel(1963) was the one who advocated improvement in expository method of teaching. He viewed teaching learning and curriculum simultaneously in one gestalt. The main focus of his thinking is on meaningful learning. He believes that the meaningful learning is acquiring new knowledge of a particular subject at any given time. Ausubel (1963) concept of meaningful learning lies in connecting the new learning material with existing ideas in the learner's cognitive structure. He extended a theory of meaningful verbal learning, which deals with three concerns:

1. How knowledge is organised (curriculum content)

2. How mind works to possess new knowledge (learning)

3. How teachers can apply these ideas about curriculum and learning when they present new material to students (instruction): (Joyce and Weil, 1985).

(1) How knowledge is organised (curriculum content) :

Ausubel's ideas have direct implication to the organisation of content and the instructional procedures. In order to strengthen the cognitive structure two principles were suggested for organising the content within the subject areas:

(i) the principle of progressive differentiation and (ii) the principle of integrative reconciliation. According to the principle of progressive differentiation, the relatively more general ideas of a discipline are presented first and the gradual specific details later. In Geography, the globe and planets are discussed first and continents, countries and regions later. It is suggested by this principle that in the teaching of all other subjects presentation of, overall and more basic ideas are given first and details later which helps in development of the cognitive structure.
The principle of integrative reconciliation suggests that new ideas should be consciously related to previously learned content, successively at each stage, of the content progression. In the study of total human body, when among different systems, the digestive system is taught, it is seen in relation to total body and when circulatory system is taught, it is taught in relation to total body and the already learn digestive system.

(2) How mind works to possess new knowledge:

Ausubel believes that a new idea can be learned and retained to the extent it can be related to the already available concepts or propositions that provide ideational anchors. For adequate learning and retention, a teacher is advised to sequence the content and present it in such a way that ideational linkages with the learner's previous knowledge are provided. Students are stimulated to note similarities and reconcile with differences and discrepancies.

(3) How instructional process be applied to instruction:

As a means for strengthening cognitive structure and enhancing retention of new information, Ausubel advanced the idea of advance organisers. He describes "the advance organiser as introductory material presented ahead of learning task and at a higher level of abstraction, is to explain, integrate and inter-relate the material in the learning task with previously learned material and also to help learner discriminate new material from previously learned material.

Joyce and Wiel have identified the given two types of advance organisers one the expository organiser and the other comparative organiser.

(i) Expository Organisers:

It provides a general model of class relationships as broader rules relate themselves with sub rules and specifics. Varying kinds of forests are first distinguished from one another before the component subforests and trees are differentiated.
(ii) **Comparative Organisers:**

They are mostly used for relatively familiar material. They are designed to integrate new concepts with parallel concepts existing in the cognitive structure on the one hand and on the other, to discriminate between old and new concepts to prevent confusion caused by similarity.

1.4.1 **Components of Advance Organiser Model:**

Advance organiser model of teaching generally consists of some elements, such as:

1. **Syntax**
2. **Social system**
3. **Application**

1. **Syntax:**

The advance organiser model has three phases of activity. Phase one is the presentation of advance organiser; Phase two is the presentation of learning task and learning material; Phase three is the strengthening of cognitive organisation. Specifically these phases contain many more things:

**Phase 1: Presentation of advance organiser**

- Clarify objectives of the lesson
- Present organiser
- Identify/define attributes
- Give examples
- Provide context
- Repeat
- Prompt awareness of learner's knowledge and experience.
Phase 2. Presentation of learning task or material

Make organisation explicit
Make logical order of learning material explicit
Maintain attention
Present material

Phase 3. Strengthening cognitive organisation

Use principles of integrative reconciliation
Promote active reception learning
Elicit approach to subject matter
Clarify

Following the specification of objectives, the advance organiser has to be presented. It may be expository or comparative as the situation demands. In both the cases, in advance organiser, the essential features of the concept must be pointed out and carefully explained in short, in the language already familiar to the students.

The second phase is devoted to two purposes, one to maintain student's attention, and the other, to make the organisation of learning material explicit. This is done with the help of lectures, discussions, films, experiments or readings.

The purpose of phase three, was to interconnect new knowledge with the existing cognitive structure. For this, Ausubel identifies four activities namely:

(i) prompting integrative reconciliation
(ii) prompting active reception learning
(iii) eliciting a principle approach to subject matter and
(iv) clarification
For facilitating reconciliation, some of the methods which are found working are:

(a) reminding students of the previous ideas
(b) eliciting summary of the new material
(c) repeating precise definitions
(d) discussing the difference and similarity in the two content progressively.

Active responding can be promoted by

(i) asking students to describe new, new material related to the existing knowledge
(ii) asking students for additional examples of the concepts
(iii) asking students to verbalise the essence of the material
(iv) asking students to examine material from the alternative points of views.

Finally, many questions can be asked about various aspects of content and learning material, or task, such as films, lectures or readings etc., for clarification.

For any situation, any combination of the two or more procedures may be employed.

2. Social System:

In the functional aspect of the model, the intellectual structure is controlled by the teacher. But the role of the student is active and participating into the process of learning. There is an environment of mutual trust and sharing.

3. Application:

The method has been successfully used for developing:

- skill of effective reception learning
critical thinking

- cognitive reorganisation, and new information and clarification.

Research evidence accumulated around the model, present mixed results. The investigations of the effectiveness of the use of advance organiser and other aspects of the model supported the theory of meaningful learning.

Ausubel (1960). Ausubel and Fitzgerald (1962) and Kuhn and Novak have also supported the theory of meaningful learning. On the effect of advance organisers on the learning of social studies, it was found that the material facilitates logical thinking in 6 and 10 years old children (Joseph T. Lawton, 1977).

1.5 LEARNING:

Learning plays very important role in determining the behaviour of an individual. Learning is the basis of success in life. The miracles of the present day civilization are the results of learning. Learning occupied very important place in the field of education. It is through learning that man brings in so much changes in his instincts that it becomes difficult to recognize them.

The process of learning begins from the birth of the child and continues till his death. All living creatures learn. When the child is born his mind is just like a clean slate. As soon as he comes in contact with his environment; he starts reacting and in this process of interaction of the individual and his environment the foundation of learning is laid down.

Gagne (1970) gave general sequences of cumulative learning, where the different types of learning were placed in an hierarchy. Each two types of learning have different optimum learning conditions e.g. learning of rule should be preceded by learning of concepts.

The theories of learning have been classified into two families one advocating the S-R viewpoint and the other the Gestalt viewpoint.
1.5.1 S-R View of Learning:

Learning is a relatively permanent change in a behavioural tendency and is a result of a reinforced practice (Kimble and Garmery 1963). Reinforced practice is the cause of learning which occurs between the cause and the result. Relatively permanent change in behaviour refers to a change in performance.

According to S-R view three elements together constitute the learning events (Gagne 1970): the learner, the stimulus or stimulus situation and the response. A learners previous learning is his entering behaviour, or his internal conditions of learning. Stimulus is an event in environment, a stimulus situation is a combination of several events in environment. A response is simply a part of our behaviour.

1.5.2 Gestalt View Of Learning:

Learning is in no sense a mechanistic, atomistic process of connecting stimuli and responses within a biological organism. Rather it is briefly defined as a relativistic process by which a learner develops a new insight or changes the old ones.

One objection frequently raised to the Gesalt field tendency to construe all learning as insightful is that some learning tasks are performed successfully without apparent development of insight as for example, when a child memorises the multiplication tables. A field psychologist concedes that some learning appears highly mechanical but he goes on to say that it is not necessarily as mechanical as it appears.

According to field theorists, three elements together constitute learning or change in cognitive structure, namely differentiation, generalisation and restructurisation of region of a life space. A region is a distinguishable functional part of a life space: it is the psychological meaning of an object or activity. Regions refer, not to objective, physical areas but to present or contemplated activities (Bigge, 1967).
1.5.3 Types of Learning:

Gagne(1970) has classified the eight types of learning in a hierarchical order as follows:

1. Signal learning
2. Stimulus-Response learning
3. Chain learning
4. Verbal learning
5. Discrimination learning
6. Concept learning
7. Rule learning
8. Problem solving learning

A brief description of each type has been given below:

1. Signal learning: Signal learning is commonly termed as classical conditioning. Modification of behaviour, causing salivation to the sound of the bell is called conditioning. Classical conditioning was developed by Russian Physiologist Pavlov.

2. Stimulus Response Learning: In stimulus response learning animal makes precise response to specific stimuli.

3. Chain Learning: In chain learning the individual links together previous learned S-R's. The links may involve physical reactions or the verbal units.

4. Verbal Association Learning: The simplest verbal association is the activity of naming an object which involves a chain of two links. For example a child observes a ball (S), says ball (R) and then following another stimulus says a red ball.

5. Discrimination Learning: Discrimination learning is that in which the individual
learns to give different response for stimuli which might be confused.

6. **Concept Learning:** In concept learning the individual responds to stimuli in terms of abstract characteristics. In concept learning, the individual's behaviour is not under the control of particular physical stimuli but the abstract properties of each stimulus.

7. **Rule Learning:** In rule learning two or more concepts are related. Rules are in fact chain of concepts. Knowledge may be represented as a hierarchy of rules in which we must learn lower order rules before learning a higher order rule which embraces them.

8. **Problem Solving:** In problem solving individuals uses rules to achieve some goal. When the goal is reached, however, the student has learned something more and is then capable of new performance using his knowledge. This is higher order rule. Without knowledge of the pre-requisite rules, problem cannot be solved.

1.6 **Retention:**

Remembering plays an important role in our daily life. Our life becomes richer if we are able to remember past experiences which makes living pleasant and enjoyable. This ability to remember plays an important role in the process of learning which is essential for our intellectual life. With the help of thinking, we attempt to do new things and solve the numerous problem that we face in our daily life. But all thinking is based on remembering. Thus, remembering is an important aid for progress in learning and constructive thinking.

Retention is an active state of the learned performance. What is retained during the inactive state must be something in the form of a structure activity as left behind it some modified structure of the organism, mostly modified brain structure. This modified structure is often called as the memory trace. Hence, retention is very difficult to improve by practice. The capacity of retention is native and cannot be improved by training.
As vague, as inconsistent, as elementary as it may be, retention is one of the major elements allowing us to function as superior beings. Gerard (1953) have made the point that, in the absence of memory, there is no past, no intelligence in the sense of benefiting by experience, and life becomes only “a tale told by an idiot, full of sound and fury, signifying nothing.” Intelligence lets us accrue the information necessary for thought, while retention allows its use into new situations. Retention does not do these things; it makes the mental events possible. It is probably impossible to over emphasise the importance of memory of human behaviour.

Further, memory is viewed by many psychologists (Bower, 1967; Wickens 1970) as consisting of multiple components, features or attributes which represent different types of information that may be encoded during initial learning and that makes possible the subsequent recall of a particular memory.

1.6.1 Methods Of Measuring Retention: Four methods are used for measuring the amount of retention. Such as:

1. Recall Method
2. Recognition Method
3. Relearning Method
4. Reconstruction Method

1. Recall Method: Recall is the most usual test for learning. The method of recall is very often used in schools. Frequent examinations after every month give pupil’s an opportunity for active recall. It requires a person to reproduce correctly what previously learned. Recall is very simple to measure, you show some list of words to the students and after an exposure for a specified time ask them to recall as many items as possible. The recall scores are convertible on percentage.

2. Recognition Method: Another method of testing that learning has been retained is that of recognition. The subject is shown the material which he learned together
with other items, which he has not known before, and he is expected to identify
the items which occurred in the original material. The police use this method in
identification parades when the subject is mixed in a small crowd of strangers and
witnesses are asked to identify him. In the multiple choice test, true and false test
and matching test, the subject is called upon to identify the correct answer from
among a number of options.

When this method is used, the number of trials a person requires to reach a
learning objective is recorded. After an interval in which forgetting occurs, subjects
reach the same objective and number of trials required for re-learning is compared
with the number required for the first time. The difference or “savings” represents
the effect of retention. Although, this method of measuring retention is less common
and probably less generally useful than recall or recognition, it is probably the
most sensitive of the three.

4. Reconstruction Method: Another method of measuring retention is that of
reconstruction. When material has been learned in a serial order the learner is
given the original items in a mixed up form and is asked to re-arrange them in an
original order, that is, to reconstruct the original order. The spelling of words may
be presented in a different order and pupils may be asked to correct giving the
proper order of letters. Obviously, this method can be used to measure only one
phase of the learning process when the material to be learned has a serial order.

1.7 Cognitive Style:

The term cognition concerns the way human beings perceive and learn,
how they reason and think, even how they remember and imagine and how their
"Minds" work in ordinary day to day activities of life.

Each individual has preferred ways of organising all that he sees; remembers
and thinks about. Consistent individual differences in these ways of organising and processing informations and experiences have come to be called as "Cognitive styles." These styles represent consistencies in the manner or form of cognition as distinct from the content of cognition or the level of skill displayed in the cognition or the level of skill displayed in the cognitive performance. Cognitive styles are conceptualised as stable attitudes, preferences or habitual strategies determining a person's typical modes of perceiving, receiving, remembering, thinking and problem solving (Hilgard and Bower, 1986). Cognitive style may entail generalized habits of information processing, to be sure, but they develop in congenial ways around underlying personality trends.

Goods (1959) defined the term cognitive as concerned with the process of gaining information and understanding of the world through personal experience. Sigel and Coop (1974) viewed learning style as "an integral concept that bridges the personality cognitive dimensions of individuals." Gibson (1976) defined learning style as "the different ways in which people process information in the course of learning." Laycock (1978) described learning style as "an individual's characteristic way of responding to certain variables in the instructional environment." Shuell (1981) stressed that cognitive style refers to the "preferred ways that different individuals have for processing and organising information and for responding to environment stimuli." Agarwal (1987) defined cognitive style as "sum total of individual's preferences for physical, social, emotional and environmental elements in the course of learning." Since these elements may vary in degree for different students and in different situations, there may be various types of learning styles for different students. Thus, cognitive styles are intimately interwoven with affective temperamental and motivational structures as part of the total personality.

Agarwal (1983), analysed the available literature on learning styles and identified eight learning styles as relevant and important from the point of view of
These are:

1. Individualistic vs. Non-individualistic;
2. Field-independent vs. Field-dependent;
3. Motivation-centred vs. Non-motivation centred;
4. Aural vs. Visual;
5. Environment-oriented vs. Environment-free;
6. Flexible vs. Non-flexible;
7. Short attention span vs. Long attention span; and
8. Responsible vs. Irresponsible.

1. Individualistic vs. Non-individualistic: Students who enjoy working on their own on some educational task have been described as having individualistic learning style. Whereas others who prefer carrying out any educational task with a group or in a team have been characterised as having non-individualistic learning style.

2. Field-independent vs. Field-dependent: Students who do not prefer to work in structured learning situations have been classified as having field-independent learning style. On the other hand, students who enjoy working in structured learning situations are classified as having field-dependent learning style.

3. Motivation-centred vs. Non-motivation centred: Students who are eager to learn more and more; are enthusiastic about exploring the learning situations, are more conscious about demonstrating their best to get high grade, praise etc for their performance, have been characterised as having motivation-centred learning style. Students with contrary characteristics have been taken as having non-motivation centred learning style.
4. Aural vs. Visual: Students who depend on printed or written matter of the like for learning have been classified as having visual learning style. Others who learn best when they hear human voice directly or indirectly have been named as having arual learning style.

5. Environment-oriented vs. Environment-free: Students, if affected by physical environment like heat, sound light while studying, have been identified as having environment-oriented learning style. On the other hand students whose learning is not affected by any type of physical environment have been labelled as having environment-free learning style.

6. Flexible vs. Non-flexible: Students who are not satisfied with the traditionally accepted solution to a learning problem and always try to arrive at unique responses and solutions have been identified as having flexible learning style. Students who are satisfied with traditionally accepted response to a learning solution have been characterised as having non-flexible learning style.

7. Short-attention span vs. Long-attention span: Students who are not able to concentrate on some learning task for a longer duration of time and may need some type of intake to continue work on that learning task, have been characterised as having short-attention span learning style. Students who can give long continuous sitting for doing some learning assignment without having any intake or without performing any other activity in between have been named as having long-attention span learning style.

8. Responsible vs. Irresponsible: When given a learning task, responsible students invariably complete in at the first instance and often do so without direct or frequent supervisions. Those students who seldom complete their learning task in time and that too with direct or frequent supervisions, have been classified as having irresponsible learning style.
Teaching learning process involves a simultaneous mutual exchange of ideas and interaction between the teachers and its students where besides the teacher, the learner has to organise himself for work, to do the assigned work, to solve problems and to make decisions which reveal something about his unique style of learning. There are major differences in learning style from one student to another and these differences can have a significant bearing on classroom learning. Researchers have concluded that learning style of students affect greatly the quality of students' achievement. Students' needs, requirements, abilities, capabilities, their ways of learning etc., have been neglected for a long time and they were forced to learn same thing by the same method, by the same person in the same environment. Not only it is important that teachers recognise these diversities in their students, but also it is desirable that they value these styles. Otherwise, even if appropriate strategies are developed and made available to teachers, there may be little demonstrable gain in pupils.

1.8 REVIEW OF RELATED STUDIES:

Related studies are the bases on which the structure of further studies are laid. The model's approach to teaching have received considerable attention only recently. A few studies have been conducted on models of teaching as such. However, researches have been conducted on methods of teaching or on various other strategies concerned with teaching learning process.

1.8.1 Advance Organiser:

Darrow, Donald Richard (1980) found that no significant difference (P<0.05) was found between treatment groups for either the initial learning or the retention measure. It was concluded that the advance organiser and the conventional overview treatment were equally effective for both the measures.

Leo, H.T. West and Natailie C. Kellet (1981) studied that meaningful learning
of skill was enhanced by the addition of advance organiser and that this effect was removed if prior teaching in relevant background knowledge was included. Further, that Ausubel’s theory can be applied to the meaningful learning of intellectual skills.

Aman, Stanley Gene (1981), found that an advance organiser in combination with Learning Activity Packet (LAP) was more effective in decreasing magnitude of error on post-test scores than was the Learning Activity Packet (LAP) alone.

Moore, George Robert (1981) found that high pre-requisite skills and knowledge, advance organiser students did not score significantly higher than high pre-requisite skills and knowledge, non-organiser students. Middle pre-requisite skills and knowledge advance organiser students did not score significantly higher than middle pre-requisite skills and knowledge, non-organiser students. Low pre-requisite skills and knowledge, advance organiser students did not score significantly higher than low pre-requisite skills and knowledge, non-organiser students. The only significant result was for level effects. The result of this research did not add support to Ausubel’s theory.

Skelly, William Harold (1982) results showed that no significant differences in student learning or retention were found among those who read both the advance organiser and the learning packet versus those who read only the packet. Also, no significant interaction between the organiser and mental ability were found.

Gonzales, Ronald Frank (1982) found that subjects in treatment group A (technical instruction plus advance organiser) exceeded that scores of subjects in treatment group B (technical instruction only). Retention test scores between treatment A and B indicated no significant difference.

Lantz, Hays-Blaine (1982) findings indicated that Advance Organisers benefitted students of all subsumer levels on cognitive learning of solar energy
concepts on both immediate and delayed tests. The presence of relevant subsumers in cognitive matrix benefitted students on both immediate and delayed tests.

Tamthai, Pusadee Piyakul (1982) found that the advance organiser had no facilitating effect on male students who were either field-dependent or field-independent. However, the advance organiser did have a facilitating effect on female students who were field-independent while it inhabited the science learning of field-dependent female students. In addition, it was found that a relationship between field-dependent/independent cognitive style and science learning achievement does exist. The field-independent students scored significantly higher on the achievement measures than did the field-dependent students.

Neel, Kent L. (1983) found that while students benefit from systematically designed instruction to teach rules, Advance organiser incorporated in that instruction do not necessarily enhanced learning transfer.

Mahajan, Sharmila Roy (1983) found that when teacher variability was minimized by the use of CAI materials, a significant interaction resulted between the cognitive level and absence or presence of organisers, at least as far as the immediate post test was concerned.

Makhdom, Mohammed Annar M. Qadhy (1983) found that the result of this study do not support the position on the facilitative effect of advance organisers. Despite predictions that the advance organiser has greater facilitative effect or more unfamiliar material, the present findings do not support this position. The possible use of advance organisers in ESL (English as a Second Language) programs is not supported by the present findings. Further research should focus more specifically on the cultural differences of subjects as well as on effects of language differences.
Livingston, Maura Elise Erinson (1984) found no statistical difference between the treatment means. High ability subjects in the advance organiser group achieved significantly higher scores than low ability students in this group on all the three occasions. A similar difference was not significant in the direct instruction group. No superior ability was found to have a significant impact on test performance. There was no significant interaction between treatment and ability. There was no significant decrease in mean scores for either the advance organiser or direct instruction group.

Miller, Ronald Edgar (1984) found no significant difference among the three treatment groups for the multiple-choice test. A significant treatment effect was found for the immediate recall test. The visual and prose organiser groups wrote a more accurate and complete description of Shane than the control group. There was no significant difference between the visual and prose groups in their written description of Shane. However, the prose organiser group produced a more elaborate schema for the organiser lessons than the visual organiser group.

Kaundal (1984) found that mastery learning strategy results is significantly better retention of the subject matter.

Deitsch, Francine Kleinman (1985) found that advance organisers fostered broader learning and also enabled subjects to independently recall more of the text. All readers benefitted from using organisers but poor readers derived proportionately greater facilitative effects than good readers.

Richard, Charles Edward (1985) found that (i) The advance organiser in verbal or graphic form was an effective approach to learning and retention of an aeronautical concept; (ii) The verbal advance organiser tended to be more effective than the graphic in both learning and retention; and (iii) The graphic advance organiser was most effective in the retention of material by these students who had exhibited a lower stand and overall performance (CGPA) in the past.
Tennyson, Larry K. (1985) found that advance organiser affected although positive yet it did not reach the 0.05 level of significance possibly due to the limited number of available subjects. The organiser treated readers demonstrated greater longevity of critically essential story information.

Healy, Vivian Coleman (1985) found that the result of this study did not provide evidence that one pre-treatment facilitated learning more than the other. In addition evidence was not found to support Ausubel's hypothesis that advance organisers facilitate retention.

Cahall, Laura Jean Brim (1985) results revealed that students in the experimental group receiving advance organisers scored significantly higher on the post-test.

Lewis, Elliott Harris (1986) indicate that either the advance organiser or simplified reading material is significantly better than no treatment, but they together are significantly better than either alone. The results of the past study questionnaire did not clearly indicate any significant differences among treatment groups.

Little, David C. (1986) results of the study revealed that the use of summaries, outlines, key terms and questions were effective in improving the social studies achievement of pupils. However, the use of outlines and questions were effective and the use of summaries and key terms were not effective in improving the teacher-perceived self-concept of pupils.

Rancourt, Richard Joseph (1986) results revealed that comparative organiser group scored significantly higher than did the expository organiser group on both the achievement and retention tests. An examination of the mean scores on the achievement and retention test for students of high and low mathematical ability in the comparative organiser group showed high mean scores than those obtained by students of high or low mathematical ability in expository organiser group.
Budhisagar, M. (1987) found a significant effect of advance organiser on achievement of students.

Swarup S., Buddhisagar M. and Rajoria, R. (1987) found that study habit on the whole did not have any significant effect on the achievement of two groups. Studing through instructional material 'with and without' advance organiser. There was significant interactional effect between treatment and concentration, and treatment and support on achievement of students.

Simpson, Henry Kertan (1987) found that (a) Carefully-selected analogy or metaphor can be helpful to all subjects, but particularly in experienced subjects when being trained for difficult task and (b) abstract models are only suitable for experienced subjects or in experienced subjects who are thoroughly trained in the model before it is used in training. An abstract model is also appropriate when the topic itself is so complex that no appropriate analogy or metaphor can be found, in this case, in experienced subjects must be thoroughly trained in the model before it is used.

Anuforo, Susan Akudo (1987) found that the achievement gain score mean of the experimental group to be significantly higher than that of the control group. The attitude gain score mean of the experimental group was also found to be significantly higher than that of the control group. Based on these findings, the researcher recommended the use of mastery learning technique as a better method of teaching English language syntax in those Nigerian secondary schools where in the samples are similar to those utilized in this study.

Righi, Carol (1988) found that first experiment indicated on significant difference in favour of either group. However, second experiment revealed significant difference in favour of post-organiser group on the overall scores. This led to the conclusion that a post-organiser is an effective tool for teaching basic programming concepts to primary grade children.
Sood, Kamla (1988) found in her study that (i) intelligence levels acted as redundant factors so far as learning of concepts in Hindi language were concerned (ii) There was no significant difference in achievement scores of field-dependent and field-independent students (iii) Cognitive style and intelligence did not interact significantly to produce differential achievement in Hindi language concepts (iv) Field-independent students retained more than field-dependent students (v) High intelligence students retained more than low intelligence students.

Welker, William A. (1989) found that advance organisers, with concrete examples, are appropriate for younger middle-school readers, who possess less experimental knowledge. Because of such contradictions to Ausubel's belief that advance organisers should be abstract in nature, and the limitations of the present study, future research is needed to substantiate the current investigation's findings and conclusions.

Groller, Kathryn Luskus (1989) revealed that the first experimental treatment produced a greater effect on student learning and retention of content area material than did the second experimental group or the control group, significant at the 0.05 level. The analyses also revealed that a greater learning effect occurred over time with the first treatment group, significant at the 0.05 level.

Jaimini, Nirupma's (1990) findings of the study revealed that the Advance Oraaniser Model and Concept Attainment Model as teaching strategies were significantly more effective than the conventional method in fostering conceptual learning efficiency in terms of comprehension and application of concepts in chemistry. However both the models are equally effective in fostering the concept learning.

Kater, Charles D. (1990) results of the analysis did not provide statistically significant evidence to support the efficacy of either type of advance organiser or delivery method. No statistically significant interaction existed between advance
organiser and delivery methods. Although the two advance organisers and the delivery methods investigated in this study did not found significant increase in the short-term learning of the experimental groups, a continued need exists to examine methods for enhancing short-term learning.

Davis Patsy Meece (1990) an analysis of covariance revealed that grade level was a significant variable in this investigation. Therefore, it was retained as part of the research design. Students in treatment 2 (advance organiser classroom presentation) had greater scores than students in treatment 3 (advance organiser classroom presentation and overt rehearsal activity). Both netted slight gains in achievement scores over treatment 1, the control group. However, the study failed to detect significant differences among the three treatment groups. Differences between intentional and incidental learning did not materialize as a result of treatments. Students perceived that they would have learned more about the historic house museum if they had received the advance organiser classroom presentation and the overt rehearsal activity.

Heinrichs, Lynn R. (1990) results revealed that the Advance Organiser was of little help for enhancing simple recall of application commands. However, the organiser did provide a useful cognitive framework for transferring knowledge to new application software packages.

Behal, V. (1992) revealed that (1) High ability students acquired mathematical concepts better than average and below average ability students irrespective of model of teaching (2) Field-independent students attained more concepts than field-dependent students irrespective of model of teaching (3) Cognitive style and level of intelligence were found to be interacting irrespective of model of teaching on achievement and attitude both (4) High ability field-independent students achieved significantly higher scores on mathematical concept test than average ability field-independent student (5) High ability and field-independent students
also scored higher marks than high ability field-dependent, average ability field-dependent as well as low ability field-dependents.

Backer, Erna Karla (1993) investigated the effect of Advance organisers on the cognitive and Psychomotor performance of nursing procedures by beginning nursing students. Since some research indicates that visual advance organiser may offer more power for learning and retention than verbal advance organiser (weisberg 1970; Mayer, 1975), both effects of visual and verbal advance organisers were investigated. The study provided evidence that the students did learn and retain both cognitive and psychomotor nursing skills. The introduction of the advance organisers however, did not have a significant impact on the learning and retention of nursing skills.

Baggelt, James Lamar (1993) investigated the use of advance organisers and found that the photosynthesis concept maps and the photosynthesis physical science concept maps were found to be effective when used for photosynthesis instruction in community college biology classes. No statistically significant overall effects on learning outcomes could be attributed to be predictor variable of piagetian developmental level, education background, age and gender. A side from their documented usefulness in planning for instruction and in learning to learn, these concept maps useful in assessing changes in the subject's structural knowledge of photosynthesis.

Kemp, patrick T. (1993) showed that none of the three experimental teaching methods was found superior to the others in producing gains in the cognitive development of secondary science students.

Marshall, Sam Gregory (1994) showed that a 2 x 2 x 2 analysis of variance (ANOVA) revealed no statistically significant main effects, secondary interactions or three way interaction between variables at the five percent alpha level. Some secondary effects were noted between the Abstract Conceptualization and
Concrete Experience variable, but statistical significance was not reached. The study demonstrated no statistically significant difference in the performance of those students receiving and Advance Organiser prior to new learning and those receiving the non-organiser. The result of the study also suggest the lack of any interaction between the use of Advance Organiser and preferred student learning style.

Wallace William Vernon (1995) results were measured by using critical effect size. Students who used the advance organisers which contained illustrations and examples in addition to the abstract introductory materials, were able to find more satirical elements in the passage than students who used the advance organiser with only abstract introductory material in a number that exceeded the critical effect size. Students who used the advance organiser which added examples to the abstract introductory materials also found more satirical elements in the passage than students who used an advance organiser with only abstract introductory materials, but the number did not exceed the critical effect size.

Robertson, Feta Luetta (1995) found that advance organiser (AO)+ meta cognitive stragegies (MS) was consistently higher than all the other strategies on both learning and retention. However, the ANOVA yielded significant overall effects only for AO + MS over MS for both immediate recall tests (IRTs) (P=0.0088) and delayed recall tests (DRTs) (P=0.005); AO + MS over C for both IRTs (P=0.002) and DRTs (P=0.008). The overall effects of AO versus AO + MS, Ao versus Ms, and Ms versus the control group were not significant. Although MS alone showed non-significant positive effects over the control group, and AO alone was significantly higher than the control group for retention, AO and MS both complemented each other to make AO + MS the most effective strategy. Educators at middle school should, therefore, consider using the AO + MS strategy to maximize the benefits of both AO + MS strategies.
Review of Researches:

The previous researches in the field of pedagogy of teaching have established beyond doubt that no single method is suitable to teach all subjects, all topics or even a particular topic. Most of the researches have compared two or three methods of teaching to acquire some objectives considering a particular subject or topic. Studies by Aman (1981), Gonzales (1982), Lantz (1982), Borine (1982), Mahajan (1983), Miller (1984), Kaundal (1984), Richard (1985), Tennyson (1985), Deitseh (1985), Cahall (1985), Lewis (1986), Rancourt (1986), Budhisagar, M. (1987), Simpson (1987), Welker (1989), Groller (1989), Devis (1990), Jaimini (1990), Heinrichs (1990), Behal, V. (1992), Backer (1993), Baggelt (1993), Kemp (1993), Wallace (1995), Robertson (1995), etc. have compared the experiment and conventional methods of teaching, in retention and learning. In some studies, it has been found that achievement is affected by the methods of teaching. While in other studies by Moore (1981), Skelly (1982), Neel (1983), Makhdom (1983), Miller (1984), Livingston (1984), Healy (1985), Little (1986), Swarup S. (1987), Sood Kamla (1988), Righi (1988), Kater (1990), Marshall (1994), etc. have compared the experimental and conventional method of teaching in retention and learning. The result of the studies were not found significant. In some studies, it has been found that achievement is not affected by the methods of teaching. Very few studies have been conducted in which two or more strategies developed to teach a particular intellectual skill have been compared.

1.8.2 Cognitive Style:

Houston and Pillinar (1974) found that the pupils taught in an open ended style achieve more complex cognitive education objective more rapidly than those taught by other two methods.

Buch, William James (1976) showed that the unit mastery method was superior cognitive outcome, while seminar students liked their method the best and the method did not produce a differential result on other effective measures.
Witkin et.al. (1977) have pointed that although cognitive style is not significantly related to overall school achievement, it is related to achievement in specialized areas whereas Mackie (1978) found that field-independent students had higher scores on all levels.

Shrock (1979) studied the role of cognitive style in problem solving performance and concluded that field-independence contributed significantly to problem solving variance.

Van Duyne S.C. (1980) explored the relationship among field-independence and field-dependence, achievement, withdrawal from the course and school-related attitudes under mastery method of instruction. The study revealed that field-independence/dependence, attitude toward the subject matter and attitude towards mastery method of instruction were also related to achievement.

Stone, Meredith Knight (1981) found that teachers adapted to student cognitive style, both across and within instructional contexts, by providing the field-dependent students with more teacher contact and more external structure and field-independent students with more independent learning opportunities. Teacher adaptation was related to positive student behaviour in both subject areas. None of the adaptations were significantly related to differential achievement for either the field-dependent or field-independent student groups.

Graffin, M.C. (1982) conducted a study entitled "An investigation of the relationship between students cognitive style on the field-dependence/independence dimension and their writing process" and reported that field-independent subject obtained higher holistic scores than did field-dependent subjects.

Byrness, Marie Estella (1983) found that the cognitive process instruction method needs further development before it can be used as an effective instruction method for improving students reading comprehension skills.
Thumann (1983) investigated that students who exhibited reflective reasoning patterns achieved higher science achievement scores and studied interaction between two methods of teaching science and student cognitive style.

Walker, A.J. (1984) found that field-independent students performed at higher level of initial learning, retention and time on task behaviour. He suggested a significant main effect for cognitive style for the initial learning variables.

Peterson (1984) indicate that field-independent students perform better in mathematics than field dependent students while later are better at learning material.

Mrosla (1984) investigated that low achieving mathematics students were more field dependent than high achieving Mathematics students in both traditional high school and in the high school for dropouts and that there would be a significant interaction on the achievement variable and the sex variable with respect to field-dependence in both schools.

Randolph, C.F. (1984) investigated the relationships among cognitive style, achievement in science, selected personality variables, and the sex of students and found significant correlations among field-independence and science achievement; and self-reliance and science achievement; no significant differences were found between the performance of males and females on the science achievement test.

Cogley, C.E. (1984) studied field-dependence/independence as a predictor of inferencing and problem solving abilities in community college students and found cognitive style as a minimal predictor of both. The results of ANOVA indicated significance (P<0.05) between highly field-dependent and independent regarding problem solving but non-significance (P>0.05) regarding inferencing ability among some students.
Dugger, C.R. (1985) compared the effects of two contrasting instructional approaches representing the field-dependence/independence cognitive dimension on the mathematical problem solving performance and found statistical differences in the math problem solving post test gain scores of the two treatment groups, receiving field-dependent and field-independents instruction, over the control group. The conclusion supported the assumption that the field-dependence/independence cognitive dimension applied to teaching improved the students performance in the math problem solving.

Roessler-Jacoby, V.J. (1985) investigated the role of field-independence using an Analogy based problem solving method and found that field-independent subjects scored significantly higher on the problem solving task than the field-dependent. Field-independent subjects using an analogy scored significantly higher on the problem task than field-independent subject who did not use an analogy. Result from the study indicated that the cognitive style of subjects may influence successful use of analogy based problem solving strategies in the solution of new paradigm problems.

Atang, C.J. (1985) reported in his study that individuals field-dependence/independence was not a significant factor in their performance in the pre-test and the post-test. Both the black and white subjects proved superior to the control group subjects in post-test scores. There was a significant relationship between pre-test and post-test time.

Fritz, K.M. (1985) reported in his study that neither locus of control nor field-independence/dependence was related to academic achievement in samples of gifted students; there was no difference in locus of control and field-independence/dependence between male and female gifted students; and there were grade level differences in locus of control and field-independence/dependence amongst 4th, 6th, 8th grade gifted students.
Nelson, P.A. (1986) studied the effects of field-independence/dependence cognitive style on achievement in a telecourse and found no significant differences between the attitude of field-dependent and field-independent students enrolled in a telecourse. Students with a field-independent learning style scored higher grades than students with a field-dependent style. There was no association between field-independence/dependence and course completion.

Yore, L.D. (1986) investigated "The effect of lesson structure and cognitive style on the science achievement of elementary school children." His findings are (1) High structure lessons resulted in higher achievement than the low structured (2) Field-independent students achieved significantly higher science scores than field-dependent students.

George et. al. (1987) found that field-dependent subjects scored significantly on Kohs Block design test than field-independent subjects.

Dutt, S. (1987) found that (i) Intelligence of the slower significantly affected the problem solving ability irrespective of strategies of training (ii) A bright child trained in any of the two strategies scored higher marks on problem solving ability test than a less bright student (iii) "Cognitive style of learner was also found to be significantly contributing to the variance of problem solving ability scores, there by showing that cognitive style affected problem solving ability irrespective of training strategies (iv) The group having field-independent cognitive style scored higher mean than field-dependent group on problem solving ability test.

Bitterman, Joan Aseltine (1988) indicated that nine subject variables were significant in explaining variance in self-directed learning preference alone, and together accounted for 61 percent of the variance in self-directed learning preference. Achieving style was the most significant; and cognitive style, though significant, was the least significant of the nine. The interviews indicated that the self-directed learning reading scale was valid to measure self-directed learning preferences, and achieving styles were reflected in the dialogue of the subjects.
Stoeltje, Yvonne Reppeto (1988) investigated the relationship between the field-dependent / field-independent dimension of cognitive style and reading performance. The result of this study support the idea that cognitive style is an important factor in school learning. Specifically, the field-dependent/field-independent dimension of cognitive style appears to be significantly related to reading performance in the lower elementary grades. Cognitive style tests could become important diagnostic tool for the classroom teachers.

Arrington, H.J. (1989) investigated the relationship between cognitive style visualization and problem-solving in eight grade males and females. He found that problem solving was positively correlated to cognitive style (0.53) and concluded that field-independent subjects were more proficient problem-solvers than field-dependent subjects.

The study of Gill, T.K. (1989) resulted in (1) High intelligent subjects scored higher on originality than low intelligent subjects irrespective of training strategies. (2) The group having field-independent cognitive style scored higher on originality than field-dependent group on creative problem solving skill test. (3) Levels of intelligence, personality types, cognitive style and training strategies when paired among themselves did not show any interaction in terms of performance in creative problem-solving skills in mathematics and cerebral dominance.

Jen, Chin I (1990) found no significant difference for the sixth and seventh graders. The regression analysis indicated that non of the selected cognitive style elements significantly predict mathematics achievement. The correlation analysis revealed that same of the selective cognitive style elements are significantly correlated with mathematics achievement. However, these finding should be interpreted with caution since the reliability and validity of the inventory are week.

Rogers, Randall Harvey (1990) found cognitive style was related to some higher order aspects of production mastery but not to others. Subjects who were
more field-independent tended to demonstrate more sophisticated programming strategies than field dependent subject including the creation and debugging of fewer programming units, proportionately more use of the edit mode than the immediate mode. Field-dependence/independence was not related to any aspect of geometry knowledge gains. Logo command mastery, nor logo comprehension mastery. In addition, conceptual tempo was not significantly related to any of the learning outcomes in the investigation.

Rosa, Marc Honorato (1991) found that cognitive styles were manifested in certain aspects of reading comprehension of narrative and expository prose is likely to differ remarkably as a function of cognitive styles. The disposition to process information in a more articulated or less articulated manner is reflected in the reading comprehension of narrative and expository prose.

Bal, Nimret (1992) found that (1) the variables of intelligence had a significant effect on acquisition and retention of higher level writing skills in English. (2) The variable of cognitive style had a non-significant effect on acquisition; a significant effect on retention as measured by test totals and scores on supply type items but not when measured by scores on selection type items. (3) Intelligence and cognitive style had a non significant interactional effect on acquisition and retention of higher level writing skills in English.

Mitchell, Cristi (1992) found post-test assessment of the use of past tenses did not reveal any main effects or interaction between groups. There were no significant differences for cooperative versus individualized CAI environments, or between auditory and visual learners. A significant positive correlation was found between students age and the amount of time required to complete the task. The number of absences and achievement were found to be significantly negatively correlated.

Yoon, Gwanmetic (1993) results indicated that types of instructional control
strategies interact with levels of prior knowledge and types of cognitive styles. This study suggests that instructional control strategies would be used differently based on students' aptitudes; also, instructional design should be considered with time on task.

Lin, Chi-Hui (1993's) results were (1) The performance of subjects can be predicted by linking structure, cognitive style, and their interaction. (2) The performance of subjects cannot be predicted by the interaction of linking structure types and cognitive style. (3) There is no difference in subjects' recall of verbal information when learning from hypertext systems incorporating different linking structures. (4) Field-independent subjects outperformed field-dependent subjects overall. (5) The attitudes of the subjects can be predicted by linking structure type. (6) The attitudes of the subjects can be predicted by the interaction of linking structures and cognitive styles. (7) Students like hierarchical structures and hierarchical associative linking structures more than linear linking structures. (8) Field-independent subjects tend to have better attitude about "Chinese Politics" than field-dependent subjects.

Krank, Hugh Mark (1993) found no statistically significant predictive power for cognitive style or treatment condition. Pre-service teachers' cognitive styles did not significantly contribute to enhanced critical thinking abilities. No significant differences were found for critical thinking performance between the three treatment conditions.

The suggestion was made that the implementation of the research design rather than an ineffectual treatment contributed to the non-significant results. Nothing was found to refute extensive research that supported the supposition that cognitive styles are sensitive to learning environment and nothing was found to refute extensive research that predicted enhanced critical thinking abilities in environments that encourage dialogical encounters.
Custer, Thomas Alan (1994) indicated that students with strong independent learning styles showed significantly higher chemistry achievement and greater achievement gains.

Moore, Thomas F. (1995) results reported that no specific cognitive style was identified. Pre-major in health education were relatively the least field-independent while students majoring in pre-med, physical therapy, occupational therapy, optometry, and dental hygiene were relatively the most field-independent.

**Review Of Researches:**

The empirical evidences exhibit a range of shades of relationship of academic performance and cognitive style for different stages and types of learning.

Cognitive style was not found significantly related with overall school achievement, Witkin et al. (1977); reading comprehension skills, Byrness (1983); inferencing ability, Cogley (1984); Overall performance at pre-test and post-test levels, Atang (1985); Telecourse, Nelson (1986); Geometry knowledge gains, Rogers (1990); and on acquisition of writing skills in English, Bal, Nimret (1992).

The list of studies showing significant relationship and superiority of field-dependent or field-independent students is much longer. The field-independent students performed better on all levels, Mackie (1978); problem solving, Shorck (1979); holistic scores, Graffin (1982); task behaviour, Welker (1984); mathematics, Peterson (1984); overall performance, Yore (1986); problem solving ability, Dutt (1987); reading ability, Stoeltje (1988); and overall achievement gains, custer (1994).

Two points have clearly emerged, one that there was no study on the subject of geography and secondly there was no agreement on the relationship of cognitive style and performance. Hence, there was a case for studying the performance in geography in relation to cognitive styles.
1.8.3 Learning:

Sherris, J.D. (1980) indicated that, deductively sequenced, concept related instructional organization enabled meaningful learning of biology concepts was predicted by their level of prior knowledge, general school ability and the degree to which they completed concept-related instructional materials.

Moore, M.S. (1980) reported that students achievement was greater with deductive rather than inductive instruction on concept learning; higher a students’ level of operational thought, higher his achievement in concept formation and students learned concrete concepts more successfully than abstract concepts.

Martin, David Alan (1980) found that the usage of comparative organizers which posited subsumers for the assimilation of the contradictory popular and theoretical definitions of supply and demand, improved retention of the theoretical concepts of the study. Generalizations of the results of the study and suggestions for further research were made.

Haghighi, Feraidoun’s (1981) results were (1) advance organizer facilitates meaningful prose learning; (2) Underlined cues facilitate meaningful prose learning too; (3) Presence of both advance organizer and underlining do not significantly enhance meaningful prose learning compared to presence of advance organizer or underlinking alone; (4) Underlinked cues as concurrent organizers might be used as an alternative to advance organizers to facilitate meaningful prose learning.

Mathews, Gary Steven’s (1982) findings support three of the research hypotheses of the study regarding summative test scores, test variance, and number of students attaining a predetermined mastery standard. However, findings do not support a fourth research hypothesis regarding unit evaluation.

Hawk, Parmalee philip’s (1982) found that the field-independent students scored significantly higher on the learning theory test than did field-dependent
students. The data showed that the use of a graphic organiser did tend to lessen the score difference between field-dependent and field-independent students but the results were not significant. The analysis of data also revealed no significant differences in the achievement scores of students receiving no graphic organiser, of students receiving a graphic organiser as a review instrument, or of students using a graphic organiser throughout instruction.

Poslock, D.B. (1982) found that students using broad categorizing cognitive style were disadvantaged in learning abstract concepts presented inductively, although this disadvantage was not evident when same material was presented deductively. Narrow-categories cognitive style performed equally well with both instructional mode. Different instructional strategies have been employed for teaching of concepts and principles with the ultimate goal of increasing students' level of achievement and retention. The stress is more on structured instructional systems so as to enable meaningful learning that involves linkage of new ideas to existing concepts and principles in learner's cognitive structure.

Anderson, Richard Thomas (1983) concluded that the teaching/learning strategies produced no difference in (1) the ability of the two group's to process, store and retain the concept and associated information; (2) in their ability to recall the concept and associated information; (3) in their ability to apply the concept and associated information in new problem solving situations; and (4) in their ability to think and work at the knowledge (recall), comprehension, application and analysis levels of intellectual behaviour.

Chezik, Mary Ann Garbackik (1984) found no significant differences among the five group means on any of the four criterion tests, taken either immediately after instruction or after a two- week delayed retention interval. The results of the time-on-task data, however showed a significant difference beyound the 0.001 level of probability in the amount of time each group spent interacting with the materials.
Efficiency scores, a meta-analysis, and frequency of response scores were also computed, and the practice worksheets were scored and analyzed in an effort to determine why the expected gain in scores did not occur.

The analyses showed that (1) as the number of workseets increased, the number of completed and correct worksheets declined; i.e. the distinction between the treatments was blurred because the worksheets were not used as intended; (2) the new introductory page to the study has a strong facilitative effect on the subjects personal learning strategy; (3) small positive effects were found in favour of the worksheets, especially when mastery of information was considered (number of perfect scores on the criterion test).

Hanclosky, Walter Vincent (1985) results indicated that the task analysis group performed significantly higher than the advance organiser and concept elaboration groups in both concept and principle learning. An unanticipated outcome of age is apparently a more important factor in determining appropriate instructional strategies than was previously expected.

Avalos, Carlos Alipio (1986) showed in his study that the use of organiser, alone and the combined use of organiser, enhancement of pre-requisites and mastery learning have significant positive effect on students learning. The combined use of the three strategies was slightly better than organiser alone in improving students' achievement. However, the effects of organisers alone may have been affected by possible differences in teachers. Positive effects in reducing the predictive value of students' prior achievement on subsequent achievement, and in developing in the students more positive affect toward the subject and toward themselves as learners were also formed. In the Biology study, organisers were not effective in improving students learning.

Jordan, Elizabeth Anne (1986) found statistically significant difference (\(_=0.005\)) for the comparison group on recall; while the experimental group showed
a statistically significant difference on problem solving. No interactions were found between the variable and the grouping. Further analysis indicated that while the results were statistically significant, mean score differences were very small. The observation was made that while results might be statistically significant they may be educationally questionable.

Camacho, Roberta Agnes (1987) found the movie advance organiser did not significantly affect the learning of information about alcohol and alcohol use in the treatment group. However, it was determined that there was a positive and significant relationship between knowledge about alcohol and alcohol use to attitudes about alcohol and alcohol use.

Mize Andrea Gayle Pickard's (1989) results do not support the use of graphic advance organisers as a strategy in teaching the mole concept at a high school level. A high correlation was found between age, reasoning ability, and students’ learning and retention of the concepts presented.

Brooker, Ronald L. (1989) found that the only significant structure interaction was teacher talk with teacher movement which had contributed five percent to the variance. Further analyses using performance residual gain scores related relatively low structure measure combinations with better achievement.

Interpretation of these results suggest that the most effective structure for teaching and learning of the basic skills involves an optimal combination of organized individual activity with regular teacher-pupil interactions.

Heinrichs, Lynn R. (1990) found that the advance organiser was of little help for enhancing simple recall and retention of application commands. However, the organiser did provide a useful cognitive frame work for transferring knowledge to new application software packages. The effect of organiser was not moderated by subjects computer literacy levels or cognitive styles. Consistant with the findings of other studies, field-independents consistently out performed field-dependents.
Freitag, Patricia Koenig (1991) found direct student use of laservideodisc in the middle school classroom extends students possible learning experiences, motivates students to stay on task and can be effectively used by students for meaningful learning. This “hands on” model for introducing students to new content, new technology, and meta-cognitive strategies promotes co-operative learning and motivation for science learning. By enabling researchers to unobtrusively record students’ daily progress, interactions and decision making, his new interactive technology is a particularly powerful tool for learning research.

Gibson, Gwendolyn Darlene (1993) found classroom practices of teachers, their educational preparation and experience significantly influence student science learning, and their interest and motivation to learn science. The findings also indicated that classroom teaching influenced students peers science interest and aspiration, and influenced the amount of time parents spent helping their children with homework and supported their child’s efforts and ambitions pertaining to science education.

Fogarty, Mary Lou Meinhold (1994) that these findings indicate a clear association between a teacher learning style and the degree of success with which the problem solver program is implemented. The most significant implication from this study is that, active teaching and learning programs will only become institutionalized to the extent to which the concern of the teachers are met.

By Grynkewich Linda Craine (1994) the following conclusions were drawn in relation to the introductory college chemistry class: (1) relationship did exist between student learning style and performance; (2) sensing thinking learners made the highest grades and sensing feeling learners made the lowest grades; (3) performance was negatively correlated with sensing feeling (SF) style significantly and with intuitive feeling (NF) style significantly; (4) Performance was positively correlated with intuitive thinking (NT) style significantly; (5) intuitive
learners (NT and NF) as a group did not perform at successful levels, and did not perform at successful as well as sensing learners (ST and SF) as a group; and (6) feeling learners (SF and NF) as a group did not perform at successful levels, and did not perform as well as thinking learners as a group (ST and NT). In summary chemical educators and students would profit by examining the intuitive thinking (NT) and sensing feeling (SF) numeric measures for each student, since the (NT) learning style was the most highly correlated style with performance and the (SF) learning style was the most negatively correlated with performance.

Noice, Amundson Anthonny (1995) indicated that a learning procedure based on the results of this research can produce enhanced retention in beginning acting students. A model of script learning was proposed, derived from the principles discussed in this dissertation.

Fincher, Ada Louise (1995) indicated that the result from the quantitative analyses lead to the following conclusions; (1) there was no significant difference in either the cognitive achievement (P>0.10) or retention (P>0.10) between the achievement experimenter (AE) Inter-Active Video (IAV) and active experimenter/Linear Video (LA) groups; (2) there was no significant difference in either the psychomotor performance (P>0.10) or retention (P>0.10) of knee evaluation skills between the active experimenter (AE)/IAV and AE/LV groups; (3) Yoders (1994) theory that AE learners should achieve greater learning with IAV than LV does not appears to be true for this group of undergraduate athletic training students with (AE) learning style, (IAV) appears to be as effective as LV for teaching both cognitive information and psychomotor skills.

Review of Researches:

- The empirical evidences exhibit a range of relationships of academic performance and learning types for different stages.
The variable of Learning types was not found significantly related with meaningful prose learning, Haghighi (1981); learning of information about alcohol, Camacho (1987); strategy in teaching, Mize (1989).

The list of studies showing significant relationship between achievement and learning types is not small. The achievement was greater with deductive method on concept learning, Moore (1980); higher concept elaboration groups in both concept and principle learning, Hanclosky (1985); pre-requisites and mastery learning, Avalos (1986); the experimental group is better on problem solving, Jordan (1986).

It may be observed here one that there was no study to my reference on the subject of geography and secondly, there was no agreement on the relationship of learning types and performance. Hence, there was a need for studying the performance of geography in relation to learning types also.

1.9 Emergence Of The Problem:

Learning of geography depends upon how information about the environment is processed and internalized. Instructional styles are closely related to learning outcomes. Educators, Psychologists, Sociologists, System analysts and many others have all developed theoretical positions about teaching and learning. Marsha Weil and Bruce Joyce translated these theories into instructional design which they call as model of teaching. These consists of guidelines for designing educational activities and environment and specify ways of teaching and learning that are intended to achieve certain kinds of goals.

The task of selecting appropriate model is complex and depends upon the purpose of teaching. No single model of teaching however attractive it may seem, is a perfect one. The models of teaching which are chosen to sequence teaching activities have much to say about the kinds of realities which will be admitted to
the class-room and kinds of learning which are likely to be generated, when the teachers and the pupils work together.

Little empirical evidence is available showing the efficiency of the model for teaching geography as such. There have been several studies comparing one teaching model with the other and an overwhelming portion of these studies show little difference between the different approaches.

If teaching of geography is to be effective there is a need for well planned, well executed and carefully analysed research into the field which brings forth the efficacy of model's teaching over traditional teaching for achieving various academic objectives.

Statement Of The Problem:

"Role Of Advance Organiser In Learning And Retention With Respect To Cognitive Style And Learning Types In Geography."

1.10 Objectives Of The Study:

The study was designed to attain the following objectives;

1. To compare the performance of groups taught through advance organiser model and conventional method.

2. To study the interaction between model's approach and cognitive styles.

3. To study the interaction between model's approach and learning types.

4. To study the relationship among model's approach, cognitive styles and learning types.
1.11 Hypotheses Of The Study:

The study was designed to test the following hypotheses in respect of the immediate performance and retention.

**Immediate Performance:**

$H_1$ The advance organiser model do not yield performance different from the conventional method of teaching.

$H_2$ Performance through advance organiser model does not vary with different cognitive styles.

$H_3$ Performance through different models of teaching would not be different for different learning types.

$H_4$ The average performance through different models of teaching do not interact with cognitive styles and learning types.

**Retention:**

$H_1$ The advance organizer model do not yield performance different from the conventional method of teaching when measured after an interval of 15 days.

$H_2$ Performance through advance organizer model does not vary with different cognitive styles when measured after an interval of 15 days.

$H_3$ Performance through different models of teaching would not be different for different learning types when measured after an interval of 15 days.

$H_4$ The average performance through different models of teaching do not interact with cognitive styles and learning types when measured after an interval of 15 days.
1.12 Delimitation of the Problem:

The study was delimited with respect to the class, subject, content area, place of study, cognitive styles and learning types as follows:

1. The study was conducted on Xth class Geography students.
2. Students were taken from three high schools of Chandigarh (U.T.).
3. The investigation of teaching was conducted in respect of only two cognitive styles namely field-dependent and field-independent.
4. Out of the range of Gagne’s learning types, only three viz., verbal learning, concept learning and rule learning were taken up for investigation.