Chapter I
Introduction
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INTRODUCTION

Education has been given different meanings by different persons. To some it is what is being taught in the schools and colleges. To many others it means grooming of the individuals. For some it is a type of skill training for conveying knowledge to the new generation.

To talk of education is to talk of the sphere of knowledge and knowledge is power. To educate the people is to empower them. Education is thus intrinsically intertwined with the development process and constitutes the instrumentality of the modernization of tradition (Raza, 1991).

The ‘new’ education principles of good teaching can briefly be summarized as follows (a) respect for the child as an individual; (b) emphasis on child initiative and child responsibility; (c) expense as the basis of the curriculum; (d) activity methods in the classroom leading to the gearing of the child’s creative ability to the learning process; (e) all teaching to be based on the close study of child psychology; (f) friendly and untrained pupil, teacher and parent relationships (Sharma & Sharma, 2004).

Education becomes the means for assuring the social continuity of life, and “continuity of life means continual readaptation of the environment to the needs of living organisms”. Education is not preparation for life, it is life itself (Sharma & Sharma, 2004).

1.1 INSTRUCTION

Instruction may be thought of as the sequence and arrangement of the external conditions of learning is such a way that will optimally interact with the internal capabilities of the learner so as to bring about a change in their capabilities (Gagne, 1965).
It is highly complete and dynamic process that involves people in the use of instructional strategies, that serve a number of functions, and it is concerned with the environmental constraints and climates (Lee, 1983).

'Instruction process' is a broad term that may encompass most of the activities taking place in the classroom and the school as well as many activities taking place in the home. In addition, virtually any aspect of instruction – duration, source, group size, nature of instructional activities and specific teacher or student behaviours is legitimately included in the construct instruction process (Weil and Murphy, 1982).

Instruction is a process by which knowledge and skills are developed in learners by teachers or, in some cases by instructional devices (Sharma, 2000).

1.2 INSTRUCTIONAL OBJECTIVES

The purposes of instruction are as broad as life itself, but at any moment of life, a teacher has a delimited set of objectives. Objectives have an orienting and organizing effect, which dispose students to attend to and organize relevant information and, thus, facilitate performance on criterion test terms constructed in accordance with the objectives (Merrill, 1974).

An instructional objective indicates instructional outcome expressed in terms of student learning. In general terms, it indicates those knowledge, skills, abilities and attitudes that the teacher expects the student to acquire as a result of instruction. In instructional designing, they provide a guideline for choosing subject matter content, for sequencing topics and for allocating teaching time and standards for measuring student achievement. In short, they serve as a criterion for evaluating the quality and efficiency of instruction.

According to Gagne and Briggs (1979) purposes for a course are defined and converted into operational terms by the process of defining performance objectives. These describe the planned outcomes of instruction, and they are
Bloom and his co-workers (1956) produced three “taxonomies” for cognitive, affective and psychomotor domains of behaviour. Each taxonomy arranged categories of objectives in order, from simple to complex, with the underlying principle that objectives at any one level build upon the one preceding to it. Bloom’s (1956) work has focused attention on the distinction to be made between two broad categories of objectives in cognitive domain. ‘Knowledge’ (Class I) and intellectual abilities and skills (classes 2-6, including comprehension, application, analysis, synthesis and evaluation). Over the last three decades, Bloom’s taxonomy has prompted many teachers for the first time to seriously consider the variety of mental activity that might be assessing in their students.

Mayer (1962) proposed the following standards for adequate and communicable instructional objectives:

a) Specification of the kind of behaviour, which is acceptable as evidence of successful instruction.

b) Statement of the conditions under which behaviour is to occur.

c) Specification of performance standards, usually, specification of acceptable accuracy and speed.

Scriven (1967) makes, in effect, the same two fold classification: knowledge and what he calls comprehension (to include analyzing, synthesizing, evaluating, and problem solving). The five distinctions to be made among the higher process will remain a matter for debate, (Rowntree 1977) because the processes somehow transform the remembered data to varying degrees and go beyond the information given. He further stressed that taxonomies must be regarded as suggestive, illuminative and stimulating rather than as comprehensive, prescriptive and indubitable. Not so much from considering whether such-and-such objective belongs to this category or that
but from speculating as to what might be going on in the mind of the student as he tackles many questions and activities given as examples in the taxonomies.

Mehdi (1988) investigated instructional development and social objectives of education at the secondary stage. He reported that (a) curricula in various subjects are far from balanced and were not conducive to attaining the three sets of objectives; (b) teaching learning strategies should be geared to attainment of intellectual, social and developmental objectives; these should be made skill-oriented and (c) evaluation techniques hinder the attainment of these objectives.

Palanivelu (1989) conducted a study on objective – based teaching at primary level. Here the objectives taken up were based on Bloom’s taxonomy. The teaching as well as testing material in science based on cognitive, affective and psychomotor objectives are prepared. The performance of the students taught by the objectives based approach was better than those taught by the teachers of the controlled group.

Sachan’s (1991) study examined the validity of Bloom’s taxonomy of educational objectives in the cognitive domain in relation to teaching of science and whether objective based teaching results in better development of the category system of cognitive domain. He conducted his study on about 500 students of 6-18 year age group. The major findings were that 4-tier hierarchy comprising, $K, C, A$ and $E$ exists in place of the 6-tier hierarchy ($K, C, A, SA, S$ and $E$) and that learning is cumulative, not sequential.

Mehra (1992) reported that the high intelligence group performed better than the corresponding low intelligence group at knowledge level than at comprehension level of objectives. On the whole, students attained more scores at knowledge that at comprehension level of objectives. High intelligence group attained more scores in authoritarian than in democratic school climate at both the knowledge and comprehension levels of objectives.
Low intelligence group performed equally well in authoritarian as well as in democratic school climate at both the knowledge and comprehension levels. Retention was found to be equally effective for learning at knowledge as well as at the comprehension level of objectives.

According to Encyclopeda of Education (2003), Instructional objectives (also known as learning objectives) are basically statements which clearly describe an anticipated learning outcome. When objectives were first coming into their own in education, they almost always began with the phrase: “upon completion of this lesson, the student should be able to...” This phrase focused on the outcome of learning rather than on the learning process. In fact, one of the criteria for a well-written objective is, that it describe the outcome of learning, that is, what the learners can do after learning has occurred that they might not have been able to do before the teaching and learning process began (Ten Brink, 2003).

A well written objective should describe a learning outcome. It should not describe a learning activity. Learning activities are important in planning and not to be confused with instructional objectives. A student oriented objective focuses on the learner, are not on the teacher. It describes what the teacher will be expected to be able to do. If an instructional objective is not observable, it leads to unclear expectations and it will be difficult to determine whether or not it had been reached (Ten Brink, 2003).

1.3 INSTRUCTIONAL DESIGN

The sequence of events of teaching acts that a teacher plans, organizes and carries out in order to create a learning environment is called an instructional design. It is concerned with the structure of content to create a suitable learning environment, to selection of appropriate teaching strategies and methods, and the assessment of the performance of the levels of students (Vanaja, 2003).
According to Hannum and Briggs (1982), “Instructional system may be viewed as composed of various inter-related components functioning together to achieve a purpose”. Just as a public school system is a sub-system of the community in which it is located, similarly, an instructional system is an important sub-system of the educational supra-system.

The secret of building an optimum instructional system with minimum cost requires exhibition of maximum flexibility and receptivity to new ideas and approaches, careful planning and continuous evaluation of how well the new design meets one’s objectives for majority of the students in the class. An instructional design is a physical layout which describes the manner in which a student should proceed to learn or a teacher to teach or a combination of both (Gagne, 1965).

According to Encyclopeadia of Education (2003), Instructional-design theory provides guidance on how to help people learn (or develop) in different situations and under different conditions. This guidance includes what to teach and how to teach it. To do this, instructional design theory must take into account both methods and situations. Just as a carpenter uses different tools for different situations, so do instructional design theories offer instructional designers and teachers different tools for facilitating learning in different situations (Tinbrink, 2003).

Vanaja (2003) gave the following types of instructional designs.

- Objective - based
- Skill - based
- Competency - based
- Learner - based
- Model - based
- Value - based
Objective based Instructional Design

Educational objectives imply the change that we try to produce in the student through the process of teaching. The objective is written in the form of a statement and has the following characteristics:

- It provides the direction for the teaching activity, which is designed to achieve a predetermined goal.
- It helps in planning for the desired change.
- It provides the basis for organizing activities.

Skill Based Instructional Design

Teaching skill is defined as a group of teaching acts, behaviours intended to facilitate pupils learning directly/indirectly. The activities that are performed by a teacher in the classroom may be classified as:

- Introducing
- Citing examples
- Reporting
- Conforming
- Explaining
- Concluding
- Demonstrating
- Hypothesising
- Conjecturing
- Contrasting
- Elaborating

These interrelated teaching acts which are observable, measurable and controlled and help in achieving teaching objectives are called as teaching skills.

Competency – based Instructional Design

Competency based education also known as performance – based education, is a relatively new approach to teaching that has in its core the ideas of accountability and competencies. Accountability is achieved by
breaking teaching into discrete components or behaviours and planning activities to accomplish and master them. In competency-based education competencies are spelled out, so that it is possible to assess student learning through observation of student behaviour. Students progress rate depends on demonstrated competencies.

Instruction is presented in the form of modules, a module being a set of learning activities with objectives, pre-requisites, pre-assessment, instructional activities, post assessment and remediation.

**Learner Style Based Instructional Design**

Today, there is a paradigm shift of education from being teacher-centred to that of being learner centred. Students use different approaches when faced with learning tasks and problems and this determines their learning style. Rosenberg (1968) defines learning style as “an individual’s characteristic pattern of behaviour when confronted with a problem”.

**Model – Based Instructional Design**

Models of teaching were designed to impart to students such strategies, which will help them to think clearly and wisely and build social skills and commitment. They help students to acquire information, ideas, skills, values, ways of thinking and means of expressing themselves in a nutshell they are taught how to learn.

**Value based Instructional Design**

The duties of a teacher in a higher learning institution are four fold:

- To uphold universal values.
- To propagate universal values.
- To inculcate universal values.
For conducting instruction more effectively, a variety of instructional strategies have been evolved from time to time. Graphic organizer instruction is one such strategy.

1.4 GRAPHIC ORGANIZER INSTRUCTION

If you’ve ever found yourself day dreaming during a class, then graphic organizers might be a very good way for you to better understand information. This is because graphic organizers can be very powerful teaching tools. Hyerli (1996) stated the definition of graphic organizers as: “Words on paper, arranged to represent an individual’s understanding of the relationship between words. Whereas convention of sentence structure make most writing linear in their form, graphic organizers take form from the presumed structure of relationships among ideas”.

To enable students to learn important relations among concepts that are only implicit in text and outlines, researchers developed an adjunct display that uses a spatial format to represent key text ideas. The graphic organizer, originally called a structured overview, was developed as an attempt to translate Ausubel’s (1968) cognitive theory of meaningful reception learning into practice. Unlike advance organizers that use linear prose, graphic organizers use a spatial format to convey concept relations (Berkowitz, 1986; Guri-Rosenblit, 1989; Simmons, Griffins and Kameenui, 1988). It is a two dimensional format of graphic organizers that also sets them apart from outlines and other adjunct displays (Alvermann, 1986). The main feature of graphic organizers is the hierarchical arrangement of ideas.

Graphic organizer instruction can help students to actively isolate process and reorganize key information (McTighe, 1992). After graphic organizer instruction students can construct their own organizers using the full text to isolate.

According to Novak & Gowin (1984), when important information is isolated, we can see how concepts are connected and this makes it more easily
understood. This could possibly be the reason that graphic organizers are seen as a useful tool in instruction. Graphic organizers tend to produce greater effects when lengthy instruction and training in organizer use is offered, constructed by students, used with more capable students.

**Historical Background**

David Ausubel’s (1960) advance organizer has been one of the most utilized methods of conveying large amounts of information within any subject area. Ausubel emphasized the “big pictures”, with the most general ideas of a subject presented first and then progressively differentiated in terms of detail and specificity. The advance organizer is a way to organize the outline of information to be learned by way of a visual representation – the graphic organizer. Presented in advance of the learning itself, this advance graphic organizer hinges upon the student incorporating new material into previously learned knowledge. The advance organizers goes further than just an overview that only condenses key ideas and is presented in conjunction with the rest of the applicable information. Advance organizers bridge the gap between the new material with the pre-learned knowledge the student already has in place. In essence, Ausubel’s advance organizer is a visual display of information introduced before the student goes to the textbook to read. Educational objectives, the focus of the instruction, are presented and organized into a graphical, visual presentation by the teacher, before instruction begins, known as Graphic Organizer Instruction (Darch & Eaves, 1986). The graphic organizer sets the stage for student learning.

Historically, graphic organizers have been done with paper or pencil or some variations. Size was limited to the paper (or chalkboard) and revisions could result in having to redraw the graphic organizer to accommodate new information. Now, with products such as Microsoft word, graphic organizers are no longer limited by space and editing constraints (Eanes, 1997).
Ausubel argued that an individual’s existing knowledge or cognitive structure is a major variable in learning new material in a content area. Thus, he hypothesized that new meanings are acquired only when they are related to previously learned information. Further, new learning will be enhanced if the existing information is clearly and concisely organised. Accordingly, Ausubel argued that learning and retention could be facilitated by strengthening components of a learner’s existing cognitive structure. Ausubel (1968) promoted the use of an advance organizer as a way for teachers to strengthen students’ existing cognitive structure with classroom learning tasks.

According to Ausubel, the advance organizer is an introductory prose passage that included content most important to the structure of the passage. Ausubel stated that advance organizers” provide ideational and scaffolding for the stable incorporation of the more differentiated material in the learning passage” and “increase the discriminability between the new material and similar or conflicting ideas in cognitive structure (Griffin, Malone & Kameenui, 1995).

Graphic organizers attempt to facilitate the initial teaching and subsequent learning of expository material by using spatial arrangements and wording that graphically organize key conceptual relationships (Carmine & Darch, 1986). Numerous researchers have offered their own definitions and procedural descriptions of graphic organizers (Alvermann, Boothby and Wolfe, 1986; Barron & Schwartz, 1984; Bean, Singer, Sorter & Frazee, 1986; Boothby & Alvermann, 1984; McGee & Richgels, 1985). From implementations of the proposed graphic organizer methodologies, a body of empirical research has accumulated that provides preliminary but inconclusive findings of the facilitative effect of graphic organizers on student’s expository text comprehension and retention. A dimension of graphic organizers that has received empirical attention is the effect of graphic organizer position on content – area text learning. Specially, studies have sought to determine whether graphic organizers presented either before or after text reading
differentially affect learners' comprehension of expository prose (Simmens, Griffins & Kameenui, 1988).

**Graphic Organizer – A Structured Overview**

The definition and function of the graphic organizer (GO) has undergone an interesting transformation over the past 15 years, originally called a structured overview (Barron, 1969), the prereading diagram was described as a form of Ausubel’s (1968) advance organizer. The structured overview was treated as something the teacher did so that students could structure and organize the “to be learned” material. In this usage graphic representations were primarily teacher constructed products.

The graphic organizer or structured overview, as it is sometimes called, is a schematic diagram of the major concepts in a portion of text. It is visual representation of how these concepts and key vocabulary terms are related to each other (Barron & Earle, 1973). One method being employed in education is instruction with graphic organizers. Graphic organizers are spatial metaphors that indicate relationships among concepts in a node-link-node visual display (Anderson, 1990; Jonassen, 1990; Jonassendal, 1993). Nodes contain key concepts. These visual representations provide learners with a “structured overview” of information to be learned. This overview directs learner’s attention towards key concepts and conceptual relationships rather than seemingly isolated facts.

Graphic organizers are “structured overviews” to include a hierarchically organized visual display of information” (Markley and Jefferies, 2001).

**Graphic Organizer – Visual Representation**

Graphic organizers are visual representation of knowledge. They are used to aid the comprehension of information from text, lecture, video and classroom discussion. Teachers use these graphic organizers in lessons to help
students form relationships between concepts to develop a strong understanding of the main idea and its subcategories (Browley et al., 1995).

A graphic organizer is a visual and graphic display that depicts the relationships sometimes referred to as knowledge maps, concept maps, cognitive organizers, advance organizers (Ruzic and Kathy, 2002).

A graphic organizers is a visual representation of concepts, knowledge or information that can incorporate both text and pictures. Examples include calendars, maps, venn diagrams and flow charts. Graphic organizers allow mind “to see” undiscovered patterns and relationships (Smith, 2003).

Graphic organizers make content area information more accessible to learners. Graphic organizers are excellent tools in achieving our goals. Graphic organizers are visual tools that help in understanding and organizing information. Graphic organizers can also help students develop higher level thinking skills and promote learning (Haynes, Judie, 2002).

Winn and Holliday (1982) stated that the proper use of spatial displays is to present concepts in a way that enables students to use the least amount of mental effort to understand the relations among these concepts – a phenomenon that has been referred to as visual argument (Walter, 1981). Visual argument involves transmitting relations among ideas through a spatial arrangements of words, rather than ordinary written language. By seeking relations, students are relieved of the burden of untangling than form the linear Cobwebs of text. According to this view, an outline uses visual argument to communicate hierarchical concept relations better than text.

Some researchers (Barron, 1969; Earle, 1970; Estes, Mills and Barron, 1969) proposed the idea that a visual spatial representation of the information presented within an advance organizer would support existing cognitive structures and initial research supported this hypothesis. This visual spatial representation became known as a structured overview. Various studies (Barron, 1969; Barron & Cooper, 1973; Estes, 1972) were undertaken to
investigate whether one procedure would be more effective than others as a method for improving students’ general reading ability (as measured by a Cloze test). No differences were found between groups of students receiving advance organizers, structured overview or no introduction to the passage on either measure of reading ability. Subsequently, in an attempt to explain the negative findings obtained from these studies, Barron & Schwartz (1984) noted that the structured overviews had been conceptualized as “something a teacher did for students” (Griffin, Malone & Kamecnui, 1995).

**Graphic Organizer – Mental Map**

Graphic organizers are also convenient ways of organizing notes and the thoughts on just about any topic. Graphic organizers are tools to help anyone to visually represent their thoughts. These visual organizers are mental maps that assist in comprehension and can be used to represent sequencing, classifying and comparing and contrasting skills. Graphic organizes assist in active thinking. “These mental maps depict complex relationships and promote clearer understanding of content lessons” (Burke, 1999).

**Pre and Post Graphic Organizer**

Graphic organizers may be introduced as advance organizers, before the learning task or as post organizer, after encountering the learning material. A review of the research from 1980-1991 (Hudson, Lignugaries – Kraft & Miller, 1993) concludes that visual displays can be successfully implemented at several phases of the instructional cycle. Indeed, positive outcomes have been reported when graphic organizers are used as both pre (Boyle & Weinhaar, 1997; Gallego. al., 1989) and post graphic organizers (Alvermann & Boothby, 1986; Boyle & Weinshaar, 1997; Newby et al., 1989; Sinatra et al., 1984; Willerman & Mac Harg, 1991).
Few studies have employed graphic organizers in the pre-reading position. In addition, empirical findings have failed to confirm statistically the intuitive appeal and logic of pre-graphic organizers treatments over alternate instructional conditions. As a pre-reading aid, graphic organizers have been found to be no more effective than advance organizers or no pre reading treatments (Barron & Cooper, 1973). However, Estes, Mills and Barron (1969) found pre graphic organizers significantly superior to both purpose setting questions and control conditions for enhancing expository prose comprehension.

An alternative manipulation of the graphic organizer was proposed to address the limitations of pre-reading GOs. In the previous research on graphic organizers, Barron (1973) noted that the graphic organizer was something teachers did for students; that is, students were not actively involved in the process of integrating new and less familiar content with their existing knowledge. Thus, to stimulate active student involvement, Barron (1979) suggested that students construct their own graphic organizers as a post reading activity.

Barron & Stone (1974) investigated the effect of experimenter – constructed graphic advance organizers (GAO) and student constructed graphic post organizers (GPO). Results yielded a statistically significant difference favouring the GPO group. However, from the design and analysis of this investigation, one cannot extract the effect of organizer constructor (i.e. teacher or student) from that of organizer position (i.e. pre or post reading). Two separate variables (i.e. position of the GO and constructor of the GO) were being manipulated, but not accounted for in the findings.

1.5 TYPES OF GRAPHIC ORGANIZERS

There are different types of graphic organizers. Graphic organizers come in many different forms, each one best suited to organizing a particular
The following examples are merely a sampling of the different types and uses of graphic organizers (Hall & Strangman, 2002).

1. **Descriptive or Thematic Map**: A descriptive or thematic graphic organizer works well for mapping generic information, but particularly well for mapping hierarchical relationships.

   ![Fig. 1: Descriptive or Thematic Map](image1)

2. **Tree Diagram**: Another type of graphic organizer is the tree diagram. Moreover, a tree diagram represents multilevels of subordinate concepts without reference to attribute values. Its main purpose is to communicate superordinate - subordinate or hierarchical concept relations.

   ![Fig. 2: Tree Diagram](image2)
3. **Spider Map**: When the information relating to a main idea or theme does not fit into a hierarchy, a spider map can help with organization.

**Fig.3: Spider Map**

![Spider Map Diagram](image)

4. **Problem and Solution Map**: When information contains cause and effect problems and solutions, a problem and solution map can be useful for organizing the material in hierarchical form.

**Fig.4: Problem and Solution Map**

![Problem and Solution Map Diagram](image)

5. **Problem Solution Outline**: A problem solution outline helps students to compare different solutions to a problem.
6. **Sequential Episodic Map**: A sequential episodic map is useful for mapping cause and effect. The material which is related to cause and effect is represented in hierarchical form by sequential episodic map.

**Fig. 6: Sequential Episodic Map**
7. **Fishbone Map**: When cause effect relationships are complex and non-redundant a fishbone map may be particularly used.

   **Fig.7: Fishbone Map**

![Fishbone Map Diagram]

8. **Comparative and Contrastive Map**: A comparative and contrastive map can help students to compare and contrast two concepts according to their features.

   **Fig.8: Comparative and Contrastive Map**

![Comparative and Contrastive Map Diagram]
9. **Continuum Scale**: A continuum scale is effective for organizing information along a dimension such as less to more, low to high and few to many.

![Fig. 9: Continuum Scale](image)

10. **Series of Events Chain**: A series of events chains can help students organize information according to various steps or stages.

![Fig. 10: Series of Events Chains](image)

11. **Cycle Map**: A cycle map is useful for organizing information that is circular or cyclical, with no absolute beginning or ending.

![Fig. 11: Cycle Map](image)
12. Human Interaction Outline: A human interaction outline is effective for organizing events in terms of a chain of action and reaction (especially useful in social sciences and humanities).

![Fig.12: Human Interaction Outline](image)

13. Venn Diagram: Venn diagram can help students to discuss similarities and dissimilarities between two different subjects/concepts.

![Fig.13: Venn Diagram](image)

In presenting a graphics organizer there are steps, the teacher can take to ensure that they are used most effectively. An effective graphic organizer will allow the student to contribute and participate in its creation. By using the graphic organizer, the teacher should encourage the students to recognize
the link between the new knowledge being learned and what has been previously learned (Merkley & Jefferies, 2001). To effectively use a graphic organizer the teacher should talk about the relationships that are visually shown between the concepts being discussed (Merkley & Jefferies, 2001).

Graphic organizers should facilitate learning more than outlines do because of their computational efficiency (Larkin & Simon, 1987). Graphic organizers appear in a form that requires minimum computation or untangling by the learner to discover relations among concepts or the text’s structure.

1.6 SIGNIFICANCE OF GRAPHIC ORGANIZERS

The use of graphic organizers enhances the understanding, organization and long term retention of information (Stevensold & Wildson, 1990) and accentuates meaningful learning and information manipulation (Janassen, 1990; Karchner, 1990; Peel, 1992). Graphic organizers also facilitate the extrapolation, combination, inference and other logical reasoning mechanism that allow learners to transfer and apply information (Jonassen et al., 1993). Robert J. Morzano, Debra J. Pickering and Jane E. Pollock (2001) states that “Graphic organizers can also be used as advance organizers by using brainstorm graphs to help classify complex information”.

The use of graphic organizers is supported by research on learning theory. Identifying essential components of a reading selection simplifies the learning task and highlights connection among and across concepts. The organizer provides a framework on which new knowledge can be attached and schema can be integrated, facilitating remembering and extending thinking. Finally, the concurrent use of visual and language skills in creating graphic organizers increases students’ active engagement through dual learning channels (Bromley, Irwin & Modlo, 1995).

Students, teachers and other professionals all utilize graphic organizers. Graphic organizers serve as effective tools for helping students and
teachers graphically display their thinking process. Graphic organizers are used to present information in a more concrete form (Burke, 1999). Outside of the classroom, professionals use graphic organizers to convey information in a comprehensive manner.

There are many reasons that a teacher use and encourage students to use graphic organizers. Different students have different learning styles. Some students are visual learners and learn best through a visual media. Other students are auditory or verbal learners and learn best through oral language. Still other students are tactile learners who need a hands on learning (Peese, 2002). Using graphic organizers can reach students that are visual learners better than direct instruction without graphic organizers. Graphic organizers also provide an approach to conceptualizing, analyzing and sharing information in a diverse classroom (Hyerle, 1996).

Graphic organizers can also be used:

- For brainstorming at the beginning of a lesson or unit to find out what students already know.
- With reading assignments or when watching a video so that students can organize and capture information. The teacher may provide one, or students can design their own using the criteria given by the teacher, such as who? what? where? and why?
- To help chronicle a sequence of events or a process.
- To relate new information to previously learned information.
- To check for understanding.
- For note taking and summarizing.
- For the culminating assessment.
- To help students store and retrieve information presented to them. (Mazrano et al., 2001).
1.7 GUIDELINES FOR DESIGNING GRAPHIC ORGANIZERS (GO)

- Determine information to be used for the graphic organizer.
- Note the main idea and key points.
- Choose a design format.
- Represent inter-relationships among ideas.
- Include personal reactions, if appropriate.
- Include terms that will require the use of higher order thinking skills.
- Include information that represents a summary or synthesis of the whole lesson, chapter or unit.
- Include information that will aid in the reconstruction of the original information.
- Use adequate connecting lines (Martha, 1996).

Guidelines for Assisting Students in the Creation of Graphic Organizer (GO)

- Discuss with students what graphic organizers are and how they can be used.
- Show students examples and non-examples of graphic organizers.
- Use a completed graphic organizer to teach a lesson or fill in a GO while teaching a lesson.
- Let students help the teacher fill in a blank GO on the overhead projector.
- Give students a partially completed GO. Teacher has the same GO on the overhead. Teacher and students fill in together or students may fill in together working in small groups or individually.
- Students are given a blank GO to fill in working together in small groups or individually.
- Give students opportunities to create their own GO. Let them design their own format. They may work individually or in small groups.
- Let students present their GO to class to teach a mini-lesson or to explain why they chose a particular format (Martha, 1996).

1.8 LEARNING OUTCOMES

The term learning refers to the acquisition of behaviour being developed by the new S-R connections. It is a relatively permanent behaviour change tendency and is the result of reinforced practice (Kimble, & Garmezy, 1963; Meliu, 1969; 1970). Learning may be defined as a relatively enduring change in behaviour, which is a function of prior behaviour usually called practice (Melxin, 1970). It is not simply an event that happens naturally, but an event that happens under certain conditions (Gagne, 1977). These conditions can be altered and controlled leading to the possibility of examining the occurrence of learning by means of the methods of science.

Gagne’s viewpoint on learning is that it occurs when certain observable changes in human behaviour take place that justify the inference of learning (Gagne, 1977). The inference of learning is made by comparing what behaviour was possible before the individual was placed in a learning situation and what behaviour can be exhibited after a learning situation (Gagne, 1977). Keppel’s viewpoint on learning is expressed in terms of its significance which lies primarily on its interactions with affective and cognitive variables (Kappel, 1964).

Learning is not limited to school. It occurs when experience causes a relatively permanent change in an individual’s knowledge or behaviour (Guilford, 1965; Hill 1990; Schwartz & Reinsberg, 1991). The change may be deliberate or intentional for better or for worse (Guilford, 1955; Schwartz &
Reinsberg, 1991). To qualify as learning, this change must be brought about by experience and by the interaction of a person with his or her environment. (Catania & Harnad, 1988). And temporary changes due to illness, fatigue are also excluded from a general definition of learning (Catania & Harnand, 1988).

Usually, changes resulting from learning are in the individual's knowledge or behaviour (Guilford, 1955). Psychologists differ on the type of changes that can cause learning. Some emphasize the change in knowledge whereas others emphasize on the change in behaviour (Schwartz & Reisberg, 1991). Cognitive psychologists who focus on the change in knowledge believe that knowledge is an internal mental activity that can not be observed directly (Schwartz & Reinsberg, 1991; Woolfolk, 1993). Behavioural psychologists assume that learning outcome is a change in behaviour. They therefore emphasize on the effects of external events on the individual, which may alter the behavioural change of the individuals. According to some behaviourists mental events could not be seen or studied vigorously and scientifically, because these mentalism as he called them, should not even be included in the explanation of learning (Restle, 1975; Woodfolk, 1993; Hill, 1990).

When the learner is subjected to a learning situation, he undergoes certain experiences, which include some perception, manipulation of ideas; feelings and some motor activity (Wingo & Morse, 1970). Changes in behaviour are brought about by changes in perception, attitude and information. Thus, voluntary attendance, informality of meetings, freedom of expression in voicing grievances, emotional security and avoidance of pressure may contribute to the conditions that nurture change (Lewin, 1948).

Learners must participate fully in selecting the issues to examine, analyse and initiate action on educative processes and that primarily emerge with them (Dewey & Freira, 1963). At the time of learning, subjects seem to be engaged in finding some sensible principle of organization for the learning
materials. But, at the time of recall, they are searching their memory, using whatever interior relationships they have detected during storage as their guide to facilitate recall (Meluin, 1969). Thus, testing in the learning phase involves the application of retention and transfer sessions (Melvin, 1969, 1970).

Gagne (1977) found a hierarchical principle useful for moving from learning principles to the other sequencing of instruction by making hierarchy the basis of approach to a theory of instruction through a desirable sequence of characteristics associated with five types of learning outcomes (Gagne, 1977; Gagne & Briggs, 1974). The occurrence of learning is inferred from the difference in human beings’ performance before and after being placed in a learning situation (Gagne, 1977).

The statement of learning outcomes at course, program and institutional levels clarifies for all stakeholders the knowledge, skills and abilities. A student must possess to successfully complete a course or program and earn a certificate, diploma, or degree from the college. In every course and program learning facilitators design activities to assist learners in achieving the appropriate course, program and institutional learning outcomes.

In the present study, learning outcomes of social studies students will be studied in terms of (i) achievement at knowledge, comprehension and application categories and (ii) retention at the above mentioned three categories of objectives.

**Achievement**: Achievement means the amount of knowledge gained by the student in different subjects of study. It encourages the students to work hard and learn more. Also, it helps the teachers to know whether their teaching methods are effective or not and help them to bring improvement accordingly.

According to International Encyclopedia of Education (1979), Achievement is performance in school/college in a standardized series of
educational tasks. The term is used generally to describe performance in the subjects of the curriculum (Page & Thomas, 1979).

Stephen (1960) defined achievement as “the unique responsibility of educational institution established by the society to promote the wholesome scholastic development of the pupil”.

According to Dictionary of psychology, achievement is:

i) Accomplishment or attainment.

ii) That which has been obtained.

iii) A specified level of success on a learning task or a certain level of proficiency in scholastic or academic work, as evaluated by teachers, by standardized tests, or by a combination of skills (Atkinson, Berne & Woodworth, 1988).

Mehta (1969) expressed the view that the word performance is a wider term, which includes both the academic and co-curricular achievement. Achievement is the learning outcome of student in which performance of the individual is included.

According to Good’s Dictionary (1973), achievement is an act of achievement or accomplishing, the objective. It is accomplishment or proficiency of performance in a given skill or body of knowledge progress is school, theoretically different from intelligence, but overlaps with it to a great degree of knowledge attained on skills developed in the school subjects usually designed by test scores or by marks assigned by teachers.

According to Oxford Advanced Learners Dictionary (1997) “achievement is a thing done, successfully especially with effort and skill”.

Landson – Billings (1999) states that at its best academic achievement represents intellectual growth and the ability to participate in the production of knowledge. At it worst, academic achievement represents inculcation and mindless indoctrination of the young into the orthodoxy of the old.
According to Megargee (2000), “Achievement tests how well students have mastered the subject matter in a course of instruction”.

**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.

Learning implies a relatively permanent change in behaviour that results from practice or activity and thus involves a three step sequence of initial acquisition, retention and use. Effective teachers are concerned about the extent to which material learned during a day, week or month will be remembered later, because that will help in meeting new or different situations. In fact, formal education is based on the assumptions that human beings can transfer what they have learned, from one situation to another, either in school or outside the school setting. Two factors are essential for this:

i) Retention can occur only if something has been acquired initially.

ii) Transfer of acquired outcomes to a new situation can occur only if the outcome has been retained (Klausmier & Goodwin, 1966).

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 ideal, full of sound and fury, signifying nothing”. Intelligence tells us the information necessary for thought, while retention allows its use into new situations.
Forgetting results from disuse, interference, reorganization, obliterate sub-sumption and motivated forgetting. Retention is usually measured by use of tests which the pupils had taken on some previous occasion during the experimental period, either as a pretest or as a test of immediate learning at the end of instructional period.

Berlyne (1966) explained that, retention depends upon two distinct facts, intelligence and motivational disposition. Rothkopf (1965) ascertained that presentation of questions at various points in learning process can increase retention of facts, answering questions and produce a generalized improvement in retention of other facts. He concluded that questions give rise to “inspective behaviour” or mathemagenic responses” which facilitated retention of meaningful learning.

Rothkopf (1966), Frase (1967), Rothkoph & Bisbicos (1967) showed that, questions improve retention of both relevant and incidental material when they occur after the prose paragraph, to which they relate. Post questions serve more than a review function – they produce non-specific facilitation of retention over the succeeding material.

According to International Dictionary of Education (1979), Retention is remaining impressions of experience or learning. Described by the psychologist Woodworth as one of the four memory processes, the other being memorizing, recall and recognition. Retention varies in individuals and may be sufficient for recognition, but not for recall. Retention seems to be dependent upon chemical and psychological changes in brain. It has been defined as the amount correctly remembered. The principal methods of assessing retention are savings, recognition and recall (Page & Thomas, 1979).

Retention is the ability to recognize or recall knowledge or to demonstrate skill that were learned at some earlier time. Without occasional practice, the level of retention declines overtime (Rowntree, 1981).
If there were no retention, there could be no learning, since the gradual increase, or improvement, that occurs with practice is based upon residual benefits from previous practice. This suggests that the factors underlying retention are the same as those underlying learning and conversely, that the factors underlying forgetting are the same as those which tend to slow down the learning process (Deese, 1982).

The course of forgetting has been studied in terms of both quantitative and qualitative changes. The quantitative delay of retention depends upon the conditions of original learning (Atkinson, Berne & Woodworth, 1988).

According to Encyclopaedia of Psychology (2002), Retention is that phase of the memory process which is involved in holding the earlier experience either in the nervous structure, or in a conscious predisposition ready for revival or recollection and recognition. Retention is a psychological process and undoubtedly depends upon the general property of organic matter, which is described under the term, “organic memory” or under the general term “habit”. In general any psychological structure which has been affected by external stimulation, or has performed an act, will be so modified in its structure, that at a later stage, it will tend to return to the condition into which it was brought through the stimulation or action.

1.9 STUDY HABITS

Human beings are known as the creatures of habits. It is rightly said that character is the bundle of habits. This reveals the importance of habits in character. Education helps the learners in the development of their self concept etc. with the attainment of knowledge by may of good study habits.

As such the work `study habits' comprises of two words i.e. study + habits.

`Study' means application of mind to the requirements of knowledge, study a kin to be eager, the diligent, a state of absorbed contemplation.
‘Habit’ refers to a sense of behaving that has become more or less fixed. Habits signify a way of acting or thinking frequently enough leading to unconscious behaviour. Thus study habits refers to acquisition of knowledge and skills through more or less permanent modes of studying.

The task of learning is not dependent on teacher alone. It is not only teacher’s responsibility, but it is also the responsibility of the pupil. Efficient learning depends not only on good teaching alone, but on satisfactory learning procedures also. Efficient learning depends upon the learner’s ability to schedule his time, the plans of his study, the habit of concentration, note taking, mental review over learning, the judicious application of whole and part method, massed and distributed learning and so on. In other words, learning involves the development of proper study habits and skills. According to Good’s Dictionary of Education (1973), “Study habit is the tendency of a pupil or student to study when the opportunities are given, the pupil’s way of studying whether systematic or unsystematic, efficient or inefficient etc”. Thus study habits implies a sort of more or less permanent mode or method of studying. Individuals have their own way of studying. It has also been found that those who have good study habits, excel others of equal intelligence in academic achievement.

Efficient learning depends upon the development of efficient study habits and skills and as such one of the continuous objective of teaching should be the improvement of study habits and skills of the students. From the practical point of view, the problem is all the more important, very often, teachers come across such students who appear to have above average scholastic aptitudes, yet they are doing very poorly in their courses of study. A large majority of these seem to have faulty study habits. Proper guidance to them, it would be expected to change their faulty study habits into desirable ones, as much study habits are important for higher academic achievement of students as much it is important for their fruitful use of leisure time. Thus study habits as a habit is genetic than specific in terms of its importance. It
has very long reading effects into the life of individuals and by communicative and interactive effects in the society (Jamuar, 1974).

In fact, study habit is a very important characteristics of all human beings who are 'being educated' and 'are educated'. As much study habit is important for higher academic achievement of students as much it is important for their fruitful use of leisure time. The later aspect is also important for adults who are now in job, particularly for the teachers. Thus 'study habit' as a habit is generic than specific in terms of its importance. It has long reaching effects deep into the life of individuals, and by cumulative and interactive effects in the society (Mukhopadhyay & Sansanwal, 1983).

Study habits and strategies refer to activities carried out by a learner during the learning process for the purpose of improving learning. This definition has three components, concerning the what, when and why of study habits and strategies respectively. First, study habits and strategies are behaviours that the learners produce. Second, they are intended as aids to learning. This definition also corresponds to a definition of learning strategies (Mayer, 1987).

Learning strategies may be defined globally, as mental process that learners can deliberately recruit to help themselves learn and understanding something new regarded as essentials of self-regulated or autonomous learning (Brandtt, 1989). Examples of study strategies for reading a text-book lesson include underlying key terms, creating an outline and taking elaborate notes.

For students including children in elementary schools, youngsters in secondary schools, and adults in colleges or training programs, learning from teachers and books becomes a dominant activity in their lines. They are expected to become professional learners, but they are rarely given any training in how to learn (Mayer, 1992; Norman, 1980; Weinstein & Mayer, 1986). In spite of their importance, study habits often remain part of the
hidden curriculum (i.e. material that is not heavily taught but that students are expected to learn). Successful students somehow acquire study strategies even though “strategy instruction has not been incorporated into the curriculum on a large scale” (Pressley, 1990).

Study habits and strategies are intended to elicit and guide one’s cognitive processes during learning. A self-directed learner processes appropriate study strategies and uses them at the appropriate times and placing during learning. Knowing when to use them or modify use of study strategy is a kind of meta cognitive skill (Mayer, 1995).

When the learner’s goal is solely and retention performance, then study strategies that promote the relating process are important. When the learner’s goal is good transfer performance, then study strategies should be used and integrating processes (Mayer, 1995).

Pressley and his colleagues (Pressley, 1990) have suggested several study strategies that could become part of curriculum. They include summarization strategies, text structuring strategies and question asking strategies. Summarisation strategies involve stating the content of a passage or lecture in condensed form. Since summarization strategies can be expected to activate the cognitive processes of selecting relevant information, they should improve students retention performance. Research supports this expectation. For example, students who were asked to write a single sentence to summarize a paragraph retained more of the information than students who simply read the paragraph (Doctrow et al., 1978).

The problem of study habits is of immense importance, both from the theoretical and practical point of view. Theoretical efficient learning depends upon the development of efficient study habits and skills of the students. From practical point of view, the problem is all the more important. Very often teachers cam across such students who appear to have above average scholastic attitude, yet they do very poorly in their causes of study. A great
majority of these seem to have poor study habits. With proper guidance of them, it is expected, they would change their faculty study habits into desirable ones.

1.10 INTELLIGENCE

The dimension of individual differences that has received maximum attention of psychologists is intelligence or ability. Freeman (1962) gave a comprehensive three-fold definition of intelligence:

- the adaptation of adjustment of individual to his environment;
- the ability to learn;
- the ability to carry out abstract thinking.

Intelligence, widely used term for general mental abilities, but also one of the most disputed concepts in psychology and education, and therefore defined in a variety of ways which one can broadly classified into biological, psychological and operational categories. The first two are embraced in Hein’s definition, “Intelligent activity consists of grasping the essentials in a given situation and responding appropriately to them (Page & Thomas, 1979).

Intelligence or general ability has been of particular interest to educators because of its strong relationship to classroom learning and school achievement (Sternberg & Kaye, 1982). Typically, intelligence is defined as a person’s score on the intelligence test. Gardener (1983) proposed a theory of multiple intelligence that identifies seven kinds of intelligence: linguistic (verbal), logical, mathematical, spatial / musical, bodily, knowledge of self (intrapersonal) and knowledge of others (Interpersonal). Interestingly, Gardner noted that some people excelled in one of these abilities, but scored average on the remaining abilities.

Briggs (1962), Mitchell (1963), Keller and Rawley (1964) found that intelligence was the major factor influencing academic achievement. Torrance (1965) concluded that more intelligent children with more capabilities are
likely to accomplish more on academic tasks. Lewis (1968) found that achievement in mathematics was positively related to intelligence. Malik (1977) found that intelligence is highly correlated with achievement in chemistry. Intelligence seemed to be instrumental in achievement.

Jenson (1980) attributed individual differences in performance to intelligence in addition to differences in sensory or motor-functions and further said that the speed of performance should be the only index of performance. Jarial (1981) reported that intelligence and academic achievement were positively and significantly related among the groups. Yue (1982) found that, despite controversy surrounding the use of traditional mental tests, they remain valid predictors of academic status.

J.P. Guildford (1984) defined", intelligence as a systematic collection of abilities or functions for processing different kinds of information in various ways". Mohan and Bhatia (1985) revealed that superior psychomotor performance was associated with high intelligence.

According to Dictionary of psychology, intelligence is:

i) The ability to meet and adopt to novel situations quickly and effectively.

ii) The ability to utilize abstract concepts effectively.

iii) The ability to grasp relationships and to learn quickly (Atkinson, Berne and Woodworth, 1988).

McMillan (1990) defined intelligence as the ability to reason and to profit by experience. An individual level of intelligence is determined by a complex interaction between his heredity and environment. The Swiss psychologist Jean Piaget greatly contributed to present day understanding of intelligence.

Rathor (1993) studied a group test of intelligence to compare the intelligence of tribal or nor tribal students of age group of 8 to 12 and found
that (1) average intelligence of higher age group is higher than that of lower age group students. (2) Intelligence is related to achievement in science and maths group and low group differed significantly with respect to scores of conjunctively concept formation.

According to New Standard Dictionary (1993) intelligence is the term, which in the general sense may be defined as the fundamental and inborn ability learned by experience and to empty the means to obtain the end in view. It has used however, with a variety of shades of meaning. Some regard intelligence equivalent to cognition, others as expressing the average mental ability indicated by various intelligence tests obviously, there is wide range in degree and intensity between the drawing intelligence of ape and the matured mind of man.

- Swahnney (1993) found that above average and average ability students scored significantly higher scores that the below average students irrespective of teaching strategy.

- Sandher (1995) concluded that teaching through learning packages was found to be a better strategy of teaching then the traditional lecture method for teaching Punjabi to adult learners at +2 stage and intelligence level of the students was found to be significant factor in the achievement.

- Chambers Marcie L. (1999) conducted study to see relationship between academic achievement and I.Q. and academic ranges from 70% to 89% at age 7.

Franzer (2000) indicated that proponents of multiple intelligences, brain based learning, and learning style theories suggest that an awareness of learner’s strengths and weaknesses can help facilitate effective instruction in education.
Ford (2000) examined the effectiveness of integrating multiple intelligence techniques and integrated thematic instruction in improving student achievement for seventh grade students in Junior High School.

Babo (2001) reported that intelligence quotient and socio-economic status has the greatest impact on reading and/or language arts and mathematics achievement and that the existence of a possible causal relationship between participation in instrument music and superior academic achievement may be proposed.

1.11 IMPORTANCE OF SOCIAL STUDIES

Social studies is an important subject for students. It goes on from class 3\textsuperscript{rd} upto University level. It goes further in whole life for a human being who live in a society. It is very essential subject for all students. This subject plays an important part in development of the human personality. It creates social living qualities and democratic qualities in a student.

The scope of social studies is very vast and wide and in fact, as wide as the world itself and as lengthy as the history of man on this earth. It includes the millions of years prior recorded history and also the foreseeable future. The breadth of social studies programme should provide for a variety of experiences so that the child’s learning will be well rounded and well balanced. It should also be possible to draw upon other fields of learning so that significant problems can be considered in the light of their ramifications, a narrow compartmentalized programme limits social learning.

It draws material from all the social sciences relating to the study of human relations and human behaviours. In doing so, undue emphasis is not laid on any one subject or part, at the cost of another.

Social studies is a compound rather a mixture where the ingredients lose their identity and something tangible and worthwhile emerges out of the combination. It differs from the teaching of history, geography, civics,
economics, etc. in the same sense in which the taste of ice cream differs from that of its ingredients like sugar, cream, milk etc. tasted in isolation.

It creates social living qualities and democratic qualities in a student. With the changing pattern of life, the home facts to provide adequate opportunities to the young child for citizenship training. The disintegration of the joint family system and working of both the parents in offices or factories have deprived the child of developing inter-personal relationships. The failure of the home to provide necessary social education to the child has placed an important obligation on the part of the school. Social studies provides opportunities for socialization and for democratic living.

In these days there is no peaceful environment, no integration and no international understanding in the world. A peaceful world is based upon mutual respect and understanding, cooperation among individuals and groups is essential to the well being of people everywhere. So this subject helps to create national integration and international understanding in the students, which can create integration and international understanding in the world.

The objectives of social studies include the acquisition of basic concepts and information, study skills involving the reading of maps, graphs and charts, and development of critical thinking and growth in desirable attitudes and beliefs.

At the elementary and secondary school level, the concepts and information in history, geography and civics are studied by the students. History makes an attempt to answer the questions how our present life has come into being and what is the quality of inheritance of which we are heirs. It gives the youth an insight appreciation and understanding of historical and cultural problems. Geography trains future citizens to imagine accurately conditions of the great world stage, so that they may think sensibly about political and social problems in the world”. Civics provides realistic and first hand knowledge and experience, leading to improvement of daily living in
home, school and community and the eventual participation by pupils in the life of the country in a democratic manner. Economics makes the child familiar with the multifarious economic activities and the economic structure of the society which would help him meet his basic needs and offer him various channels at the close of his school career. It is to help the child know the natural resources of his country and how he can make maximum use of them to improve conditions of living, the necessary complementarily between production and consumption and how human goals can be achieved through planning. It is obvious that the extent of the area is very vast and range of possibilities is very wide. So social studies develops all round personality of a child.

1.12 NEED OF THE STUDY

Learning is a process through which we acquire new modes of behaviour or modify the existing modes of behaviour. Human behaviour is classified into three domains: cognitive (thinking), affective (feeling), and psychomotor (doing). Teaching is a purposeful activity done to facilitate learning. Teaching is an activity done to facilitate the students to acquire (factual) knowledge, to form (desirable) attitudes and to develop (required) skills.

Learning is a process of information processing. It involves reception, selective perception, semantic encoding, storing in long term memory and retrieving whenever necessary. Teaching should be arranged so as to enable the process of learning.

In the Fourth Survey of Research in Education (Buch, 1992) about 20 studies were reviewed related to teaching. But in the Fifth survey of research in education (1997), 44 studies on teaching were reviewed and placed in a separate chapter. This is a potent indicator of the momentum gained by the research on teaching.
Students often encounter difficulty when attempting to learn from an entire chapter of text that contains numerous new concepts and relations among those concepts. Educators have long been interested in easing this burden for students. Some adjunct aids of displays, such as graphic organizers have received considerable attention of the researchers, the goal being to improve recall, comprehension and retention of content by students.

A perusal of the research studies indicates that graphic organizers appear to provide readers (students) with a procedure for successfully extracting, remembering and retrieving information.

The present study proposes to investigate some significant features of graphic organizer instruction, i.e.

- What is more effective pre or post graphic organizer instruction?
- The extent to which the visual-spatial hierarchical display of expository text book information through graphic organizers facilitates the learning outcomes of students i.e. achievement and retention in social studies.
- The degree to which graphic organizers facilitate study habits of students.

1.13 STATEMENT OF THE PROBLEM

“EFFECT OF GRAPHIC ORGANIZER INSTRUCTION ON LEARNING OUTCOMES AND STUDY HABITS OF HIGH SCHOOL SOCIAL STUDIES STUDENTS”.

1.14 OBJECTIVES OF THE STUDY

- To develop instructional material based on graphic organizer instruction for teaching social studies to class IX students.
- To compare the mean gain on achievement scores in social studies of students taught by different instructional treatments.
• To study the effectiveness of the three instructional treatments for high, average and low intelligence groups.

• To study the effectiveness of the three instructional treatments for high, average and low intelligence groups at knowledge, comprehension and application categories of objectives.

• To compare the retention scores of three groups of students taught social studies through different instructional treatments.

• To study the effectiveness of the three instructional treatments for high, average and low intelligence groups with respect to retention at different categories of objectives.

• To study the effect of instructional treatment on study habits of class IX students of high, average and low intelligence.

1.15 HYPOTHESES

Hypotheses for analysis of gain scores in achievement

H_1 The three instructional treatments yield different mean gain on achievement scores in social studies.

H_2 The high, average and low intelligence groups yield different mean gains on achievement scores.

H_3 Comparable mean gains on achievement scores are yielded by the students at knowledge, comprehension and application category of objectives.

H_4 There is no significant interaction between instructional treatments and levels of intelligence.

H_5 There is no significant interaction between instructional treatments and categories of objectives.

H_6 There is no significant interaction between levels of intelligence and categories of objectives.
H7 The three instructional groups of three levels of intelligence exhibit comparable mean gain on achievement scores at knowledge, comprehension and application categories of objectives.

**Hypotheses for analysis of retention scores**

H8 Retention is independent of instructional treatment.

H9 Retention is independent of levels of intelligence.

H10 Retention is independent of categories on objectives.

H11 Students of high, average and low intelligence retain comparably when taught social studies through different instructional treatments.

H12 Students taught through different instructional treatments attain comparable retention scores at knowledge, comprehension and application categories of objectives.

H13 Students of high, average and low intelligence retain comparably at knowledge, comprehension and application category of objectives.

H14 Students of high, average and low intelligence retain comparably at knowledge, comprehension and application category of objectives when taught through different instructional treatments.

**Hypotheses for analysis of scores of study habits**

H15 The three instructional treatments yield comparable mean gain scores on study habits inventory.

H16 The high, average and low intelligence groups attain comparable mean gain scores on study habits inventory.

H17 There is no significant interaction between instructional treatments and levels of intelligence with respect to study habits.
1.16 DELIMITATIONS

The present study has the following delimitations :-

- The study was delimited to studying the effectiveness of only pre graphic organizer instruction, post graphic organizer instruction and traditional instruction.

- On Class IX social studies students of Ropar, 12 lessons of social studies were selected for instructional treatment from syllabi of social studies prescribed by Punjab School Education Board.

- The experiment was limited to 43 working days of the academic session.