



Effect of graphical organizer teaching model on students' learning achievement

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ABSTRACT

The present study explores the effectiveness of Graphical Organizer (GO) Teaching Model on Student's Learning Achievement in General Science at Elementary School Level. Graphic Organizer Teaching Model helps teachers to make their content understandable for their students. The objectives of the present study were to assess the effect of GO Teaching Model on students' learning and explore the understanding of student. It was an experimentally study. The experiment was conducted at an Elementary School. Pre-test posttest control group design was adopted for conducting the experiment for the study. Difference in achievement of students (in control and experimental group) in General Science was checked through comparison of their performance in Post-test. Data analysis revealed that students of experiment group who were taught through GO teaching got more marks than students in control group. Findings depicted that GO Model proved an effective instructional strategy. The result reported that students learning achievement was improved through the use of GO in General Science. It was recommended that teachers may be trained in how to design and use GO in teaching. The findings of the study have implication for teachers, curriculum developer's educationists and researchers.

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Introduction

Puri (2006) believed that teaching is a pillar of any education system. Its special function or purpose is to impart knowledge and develop understanding among the students. Teaching and education are closely related and it cannot be separated. There may be learning without teaching but effective learning without teaching may be a wishful thinking.

Donna. M. Meters (1998, p.60) explains that teaching is actually a process of imparting knowledge, skills and values as required and desired by the society. The major objective of teaching is to make content or subject matter comprehensible for students. The best method indeed the only fully compelling method of establishing causation is to conduct a carefully designed experiment in which the effects of possible lurking variables are controlled. To add Graphic Organizers (GO) in use of concept comprehension is one of the modern ways of teaching. In fact graphic organizer is one of the categories of advance organizer. David Ausubel (1963) popularized theory of Advance Organizer that they are introductory material that teacher uses in order to relate the previous information of students with the new one. GO makes teaching learning meaningful for students and also help them in their understanding. GO is visual representation of a text or a topic.

Graphical Organizer (GO) is visual representatives of knowledge, concepts or ideas. They are known to help relieve learner boredom, enhance recall, create interest and clarify information. (www.wikipedia.com retrieved on August 22, 2010)

According to Hudson, Lignugaris-Kraft, and Miller (1993) Graphic Organizer can be used as advance organizers, as post organizers, after encountering the learning material. Understand that visual displays can be successfully implemented at several phases of the instructional cycle.

According to Siddiqui (1991) The GO is a category of Advance Organizer. An important resource in the classroom is written material. A perennial concern of educators is their preparation and use of materials that are organized in such a way as to maximize learning. David P. Ausubel, (1963) in his theory of meaningful verbal learning advocates the use of Advance Organizers to facilitate the learning of written materials. The Advance Organizer is especially useful to structure comprehensive curriculum sequences or courses and to instruct students systematically in the key ideas of a field.

According to Boyle and Weishaar, Gardill; and Jitendra (1999) Graphical Organizer Teaching Model can successfully improve the learning when there is a substantive instructional context such as incorporate teaching model.

According to Anderson and Burns, (1989) that Teaching is an interpersonal, interactive activity, typically involving verbal communication, which is undertaken for the purpose of helping one or more students learn or change the ways in which they can or have to behave.

According to Ahmed (2005) that the Teacher is generally compared to luminous body which radiating light and illuminating darkness of other's soul. So, the Teacher is the light house for the land and a spring of fresh water for the Town.

According to John M. Gregory (1886) that Teaching in its simplest sense is the communication of knowledge. This knowledge can be a fact, a truth, a guideline of religion, a percept of morals and a story of life. It may be taught by use of words, by signs, by objects and by actions. The person who imparts this knowledge is called a Teacher.

According to L.B. Curzon (2001) that teaching is not a simple task rather teaching is a complex activity, varying outwardly from one situation to another. Teaching is considered by power to be the systematic series of activities through which

the teacher seeks to interpret his specific tasks in relation to modification of learner's state of knowledge. Teaching cannot be the same; the person experience is always changing in teaching profession.

Joyce and Weil (2003) have admirably described and explain the importance of models of teaching. He said that models of teaching are really the models of learning if they use properly. They help students get information, ideas, skills, values and ways of thinking. A model of teaching is a comprehensive approach to teaching. With the help of teaching models the teacher can understand the response of the learner.

Types of Graphic Organizers

There are various types of Graphic Organizers. Some of them are the following:

The process of converting a mass of data, information or ideas into a graphic map and its different types gives the student a large amount of understanding and insight into the topic at hand. To create the map, the student must concentrate on the relationships between the items and examine the meaning attached to each of them. While creating a map, the teacher must also prioritize the information, determining which parts of the material are the most important and should be focused upon, and where each item should be placed in a map. The creation of Graphic Organizers also helps the student generate the idea as they develop and note their thoughts visually in a paper. (Available on www.enchantedlearning.com August 20, 2010).

Graphic Organizers some which are also called maps, entity relationship charts and mind maps are pictorial way of constructing knowledge and organizing information. They help the student convert and compress a lot of seemingly disjointed information in to a structured, simple to read, Graphic display. The resulting visual display conveys complex information in a simple to understand manner. (Available on www.enchantedlearning.com/graphicorganizers retrieved on August 18, 2010).

Richard D Parsons (2001) believed that learning is a permanent change in behavior or capacity acquired through experiences. The learning takes place when it is related to the needs and experiences of the learner. The learning is favored when meaningful association is established.

Advance Organizer Model

According to Donald. C. Orlich (2009) that Advance Organizer Model is designed to teach organized bodies of content in a way that they can stay in the learners mind for long-term period. The Advance Organizer provide students with an overview and focus content differentiation provide item of information that can be more easily understood and integration provide meaningful learning by helping students understand the relationship among the elements of the content be taught.

Rose .A. Utley (2010) believes that the Advance organizer Model instructor needs to identify clear connection between past content and how the current topic relates to what is already known. The rationale is that if the learner makes a connection between the new information and previous knowledge, the learning experience will become more meaningful and learning will be facilitated. An advance organizer model is more than a review of what was and what will be covered and it is not the same as presenting the lesson objectives.

According to Siddiqui (1991) that David. P Ausubel is one of the few educational psychologists who address himself simultaneously to learning, teaching and curriculum. His theory of meaningful verbal learning deals with three concerns:

- How the mind works to process new information. (Learning).

- How teachers can apply these ideas about curriculum and learning when they present new material to students.(instructions)

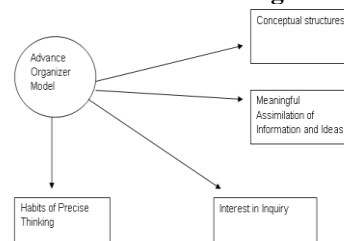
- How knowledge is organized. (Curriculum content)

David Ausubel (1963), an education psychologist, did some interesting innovative work. He explained that at any point in time, a learner has an existing organization and clarity of knowledge in a particular subject matter field. He called this organization a cognitive structure and relationship. Meaning can appear from new materials only if they are joined with existing cognitive structures of previous learning. In meaningful learning teacher teach new material, connecting it with the previous knowledge of the students.

Burnning et al, (1999) explain that an advance organizer is a small amount of verbal or visual information that is presented to the learner before the introduction of the new material. Learning becomes meaningful if the new material is provided when the learner has appropriate

According to Siddique (1991) Advance organizer is powerful technique of presenting data. It may be produced in altering shape, as needed. It presented on the level of generality and strives to seek relationships among the ideas. Beside this advance organizer in general terms, it is noted that one can not provide more detailed information without specific knowledge. Teaching is directed to help students increase the number of information and also to relate it with previous information.

Graphical Presentation of Advance Organizer



Source:Bhalwankar(1989) (Fig: No. 1)

Graphical Depiction of the model shows that lesson starts with presentation of the advance organizers and imparts focus upon meaningful learning. This process works upon principles of assimilation. This diagram shows that new information can only be absorbed if it is related with the previous or prior knowledge stored in cognitive structure of a learner.

Types of Advance Organizer Model

Advance organizer can be categorized in to various types according to the content. They are explained as under:

Expository Advance Organizer

Expository organizers are especially helpful because they provide ideational scaffolding for unfamiliar material. Expository organizer provides new knowledge the students need to understand for the upcoming information. Expository Advance organizers simply describe the new content to which students are to be exposed.

Comparative Advance Organizer

Siddiqui (1991) discussed about comparative advance organizer that they are used with relatively most familiar material. These organizers connect new learning to previously learned material. They are designed to integrate the new concepts with basically similar concepts exists in the cognitive structure, yet they are also designed to distinguish between the old and new concepts in order to put off the confusion caused by their similarity.

Skimming Organizer

Skimming the information before reading can be a powerful form of advance organizer. This technique can be very supportive when detailed information is not essential. Skimming approach can be applied by the teacher if there is any kind of shortage of time or to just give the overview of anything than this organizer can be of a great help for the teacher and as well as for the learner.

Narrative Advance Organizer

Howard Pitler (2007) believed that Narrative Advance Organizer is usually stories articles or artistic works. It is also the new information in the form of a story.

Graphic Advance Organizer

According to Robert J. Marzano (2007) it is the visual representative for students. Graphical Advance Organizer is usually tables, charts or artistic works, which is best for the visual learners and slow learners to understand the relationship between the subject matter.

Graphical Organizer

Organizers are used to set up or out line the information relationship between concept and propositions, a cognitive map is kind of visual road map showing some of the ways to connect meaning of the concept.

Patti Drapeau, (1991) explains that Graphic organizers are the teaching tools that can be use for all types of students. They help visual learner to see what the model are trying to convey and provide a structure that helps children to stay focused and attached in their studies.

Hope (2001) explained that Graphic representations can be used to understand text and solve a variety of problems of the student in grasping the learning material. Graphic organizer techniques can help students consider text and see how it is structured, what the similarities are and what the differences are. Donald (2009) express that Graphical Organizer can be extremely helpful at the beginning of any lesson. The purpose of the Graphical Organizer Model is to provide a student with a structure of previous knowledge so that they understand each part of the hierarchy of knowledge in the lesson as well as the relationships among the parts. Graphical organizer model can be easily changed and re-arranged according to the subject matter and the level of the students. In Antonaia (2003) explains that frames and graphic organizers can be powerful tools to help the student locate select, sequence, integrate and restructure information both from the prospective of producing information in written responses.

According to Kathleen (2009) Graphical organizers are mental maps that involve the student in active thinking through the representation of key skills such as sequencing, comparing, contrasting and classifying the subject matter. These mental maps represent complex relationships and promote clearer understanding of content to the learner.

Sprenger (1999) says that when semantic memory is not processed, in several ways, the brain has a hard time making neural connections. Semantic memory operates word by word and it used working memory. Each learning experience of the learner should be organized to present a short chunk of information. She discusses the devices such as peer teaching, questioning, strategies, summarizing, role playing and graphic organizer that can be used to help students to built semantic memories.

According to Darolyn (2004) graphic organizers are in various forms. They are graphic, pictures, lines, circle and other

shapes that organize your reading. Graphic organizer helps to guide the thoughts, which are inside the head of the learner.

According to Laurie (2007) graphic organizers are more innovative and inspiring than traditional linear approaches to learning that most adults have been conditioned to. Since the brain's attention is selective. It tends to focus more on novelty, while ignoring the routine.

The Editor of Teaching English (2008) has describes graphic organizers provide the learner with the different way of seeing and thinking about information. GO also help the learners in removal of the language barriers, so they can focus on the connection between them.

Constructing Graphic Organizer Teaching Model

Diane (2009) give the suggestions for creating GO usually include the following steps:

- Analyze the learning task for words and concepts important for the students to understand.
- Arrange them to illustrate the interrelationships and patterns of organization.
- Evaluate the clarity of relationship as well as the simplicity and the effectiveness of the visual.
- Substitute empty slots for certain words in order to promote student active learning.
- Note the main idea and the key points.

According to Diane .E. Kern (2007) Graphical Organizers are visuals that show relationship between concepts, terms, facts or ideas in a learning activity. Other term related to graphical organizers that are visual, visual structures, concept maps, cognitive organizers and concept diagram. These are very helpful for those students and learners who have a great problem in understanding the relationship between the content which can be easily reduce by using the Graphical Organizer Teaching model in the classroom. It can be used in any subject or in any content. Linda (2010) believed that Graphic Advance Organizer would offer an opening over view to learner whether a flowchart, diagram, chart, table, map, figure or something else.

Laurie (2007) Graphic organizer that works visually to analyze concepts is the tree. If the topic involves a chain of events with a beginning and with multiple outcomes at each node, tree can be used. It is commonly used for hierarchical relationships, can also help learner to breakdown complex ideas.

Walch (2005) graphic organizer can be used to compare and contrast the content. It can compare two things which have same similarities and can be comparison between them. This type of GO is great for comparing things with common element but different content. Joel (2005) believes that Contrast GO highlights the apparent likeness and differences between objects and events.

Joel (2005) Flow charts were developed by logicians and early computer programmers. Their purpose was to visually depict procedural knowledge. Brisco (1990) discussed that flow charts are useful to illustrate path, hypothesis, techniques, procedures and scheme.

According to Diane (2009) a number of authorities have addressed the impact of graphic organizer on students reading, understanding and recall. Graphic organizers developed as result of Ausubel's research in to benefits of using an advance organizer in the form of an introductory style passage to enhance the reader's acquisition of new knowledge. Hawk's research (1986) favored the Graphic Organizer strategy because (1) GO provided an overview of the material to be learned (2) a reference point for putting a new vocabulary and main ideas in to an orderly pattern (3) a sign for important information (4) a

visual stimulus for written and verbal information (5) a brief review tool. Research on GO by Alvermann and Boothby (1986) suggested that the effect upon comprehension are increased when GO are partially constructed by as during reading or post reading activity. Novak (1991) indicates that learner constructed concept maps reflected learner understands of science concepts better than traditional forms of testing. Bean, Singer, Sorter and Frasee (1986) reported GO enhance result when used.

The researcher found no research study in the area of Graphical Organizer with reference to students' learning achievement in General Science in Pakistan scenario. Therefore the researcher decided to conduct a research study on the topic of "Effect of Graphical Organizer Teaching Model on Students' Learning Achievement in General Science" at elementary school level in Pakistan."

Statement of Problem

The problem under investigation was to determine the effect of Graphical Organizer (GO) teaching model on student's achievement in General Science at Elementary Level. Introductory material has its worth in making teaching learning meaningful and effective for the learners.

Objectives of the Study

The study was designed to achieve the following objectives:

- To determine significance differential student's learning achievement of taught through Graphic Organizer teaching model and traditional teaching at Elementary Level.
- To asses the effect of Graphical Organizer (GO) teaching model on student's learning achievement in General Science.
- To explore the effects of Graphical Organizer (GO) Teaching Model and traditional teaching on student concept understanding in General Science at Elementary Level.

Hypothesis

The following are the hypothesis of the study:

- There is no significant difference in student's learning achievement taught through Graphical Organizer (GO) Model and Traditional Teaching.
- There is no significant effect of Graphical Organizer (GO) teaching model on student's learning achievement in General Science.
- There is no significant difference in student's concept understanding taught through Graphic Organizer teaching model and traditional teaching.

Population and Sample

All students of elementary school level were the population of the study.

Sample

The experiment for the study was done in a public sector school located in Islamabad. Sample for study was selected randomly from students of 6th class. Students were divided into control group and experimental group randomly. Two teachers having equal academic, professional qualification and service length 5-10 years were selected randomly from the Sample School. Both teachers were sent randomly to the groups (control and experimental). Sample for the study consisted on 40 students of 6th class. There were two sections consisting of 20 students in each section. Therefore, the both section were taken as sample for the study. However students in control and experimental group were sent through random sampling techniques.

Instrument and its validation

A teacher made test were used for data collection. Instrument and its validation were checked by the consultation with supervisor and subject teacher. The validity and reliability

of teacher made Pre-test and Post-Test was checked through the expert's opinion and pilot testing. The teacher made test was developed by the researcher and was pilot tested on a group of 70 students of a government school. Keeping in view the result of the pilot test, some amendments were made with the respective experts' opinion in the test items.

Data Collection

For Collection of Data teacher made test, Pre-Test and Post-Test was used.

Data Analysis

Data were analyzed through the use of Statistical Package for Social Sciences (SPSS) by applying t-test and Graphs.

Delimitation of the Study

The study was delimited to the following factors due to limited time and other recourses:

1. to elementary school level;
2. to teaching of General Science of 6th class;
3. developing lesson plan based on GO for 05 Chapters of General Science of 6th class;
4. to students of 6th class level;
5. conducting experiment in Federal Government Girls Middle Model School Islamabad only;
6. Developing Lesson plan based on following Graphical Organizer (GO);
 - (a) Tree.
 - (b) Cycle.
 - (c) Flow chart.
 - (d) Cause and effect.
 - (e) Contrast.

Procedure of the Study

After studying the researches about effectiveness of using GO as teaching method, the researcher came to know that there was no single research conducted on use of GO Teaching Model on General Science at Elementary Level in Pakistan. Consequently, the researcher decided to conduct a research study in Pakistan scenario. It was an experimental study based on pretest-posttest control group design. For achieving the objective of the study an experiment was conducted. The experimental method is the only method of research that can truly test hypothesis concerning cause and effect relationships. It represents the most valid approach to the solution of education as science. (Gay, 1992, p.298).

The experiment was conducted in Federal Government Girls Elementary School. Sample for the study was collected randomly from students of 6th class of the school.

- The researchers developed lesson plan for General Science based on Graphic Organizer teaching of 6th class level for achieving the objectives of the study.
- A teacher made achievement test was constructed by the researcher and it was used as instrument for data collection.
- The validity of the instrument was checked through pilot testing and expert's opinions.
- The instrument was than amended in expert's opinion and keeping in view results of Pilot Test, some items were modified. After validation of instrument and lesson plans the researcher randomly selected two teachers from sample school having equal academic M.A (Master of Arts) and professional qualification B. Ed (Bachelor of Education) and teaching experience (5-10years). Out of 50 students of 6th class, 40 students were selected randomly from the sample school. A teacher made Pre-test was administered on randomly selected students in order to as certain that they are similar. Then students were sent randomly in control and experimental group.

There were 20 students in each group control and experimental. Teacher for control and experimental group were assigned randomly in both the groups for teaching. At the end of treatment period, a teacher-made posttest was administered on all students in control and experimental group on the same day and for the same duration. The tests were marked by the respective teachers, and results were tabulated by the researchers. Then the collected data was analyzed through Statistical Package for Social (SPSS) and suitable statistical techniques were used for data analysis.

The following variables were controlled for experiment;

- Teacher's Academic Qualification;
- Teacher's Teaching Experience;
- Teacher's Professional Qualification;
- Content Taught; The selected content from the Text book of General Science for 6th class level were taught to the students in Control and Experimental Group
- Facilities in Classroom; Facilities in classrooms of both groups were the same.
- Teacher's Period Length

The following variables were controlled for experiment:

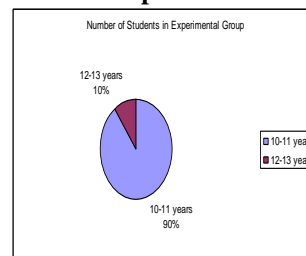
- Teachers' academic qualification was controlled.
- Teachers' professional qualification was controlled.
- Taught content of General Science to the both groups was controlled.
- Facilities in both classrooms were controlled.
- The teachers' teaching length was controlled.

This study was conducted in the Federal Government Girls Middle Model School Islamabad I8/1. Prior to experimentation, permission for the study was taken from the Principal of the School. 40 students of 6th class were randomly selected for experimental group. A Pre-test was conducted before the start of experiment on these 40 students of class 6th. Teachers were randomly assigned to control group and experimental group. After that these 40 students were divided in to two groups, comprising 20 students in each group. 20 students were randomly assigned to experimental group and 20 students were randomly assigned to control group. The researcher trained the teachers in using of Lesson Plans based on Graphic Organizer for two days. Teacher of Experimental Group taught students using lesson plans' of Graphic Organizer developed by the researcher. Teacher of Control Group taught students through their own Traditional (lecture) method. Each group was treated as separate class. The content taught to both groups, experimental and control was the same. Teacher's academic and professional qualification, and their teaching experience was the same, classroom facilities in each classroom were the same and the length of the period in each class was the same. The number of students was the same in each group. The difference only was in methodology of teaching of teachers because one teacher was teaching with the traditional method and the other teacher was teaching with the Graphic Organizer. The age of the students was from 10 to 11 years. At the end of Treatment period a Teacher made Post-Test was conducted and the both groups Experimental and Control appeared for the Post-Test in the same subject in the same content in the same environment, at the same time and for the same duration. The marks obtained by the student in Control and Experimental were further tabulated and the analysis was done through assessing SPSS and applying T-Test under present sample for final difference in performance of both group. Tests' of students (Control and Experimental) was checked by the respective teachers.

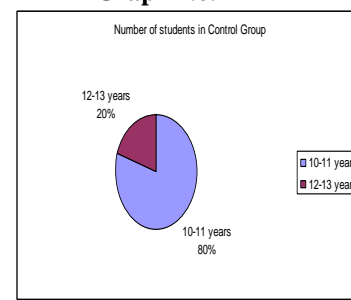
Selection and Training of Teachers for the Experiment

Two teachers possessing same qualification, teaching experience and professional qualification were selected for experiment. These selected teachers had Master's degree in English & B.ED degree teaching experience for 10 to 15 years. The selected teachers' for experimental group was provided proper training to use GO in Teaching of General Science. Researcher herself prepared the lesson plans' on selected chapters before the start of experiment. Teacher selected for experiment was provided two days training by researcher herself.

Graph No. 1



Graph No. 2



Interpretation

The above Table shows that students of both group (control and experimental) have more or less same age. The 40 students were present in the experiment of the study which were randomly assigned to both groups (control and experimental). There were 18 students in Experimental study which were according to their age level of their class and 16 students were in Control Group.

Interpretation

The above Table shows that 40 students were present in the experiment. Each group (control and experimental) had equal students. 20 students were in control group and 20 students were in experimental group. In both groups the students were randomly assigned to each groups (control and experimental).

Testing of Hypotheses of the Study

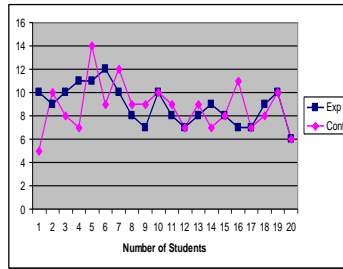
H₀1: There is no significant difference in performance of students in control group and experimental group in Pre-test.

Interpretation

The above Table shows that calculated t value (.168) is less tabulated value (2.09). Therefore the hypothesis stating that there is no significant difference in performance of students in control group and control group in pre-test is hereby accepted and it is concluded that there is no difference in the mean score of student's of control and experimental group and it is concluded that there is no difference in the performance of students in control and experimental group in pre-test. It means that students in both groups (Control and Experimental) were equal before the beginning of the experiment.

Below is the graphic presentation of students' marks in pre-test:

Graph No. 3

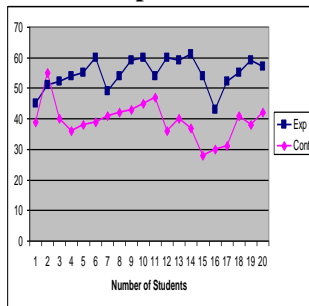


Ho2: There was no significant effect of Graphical Organizer (GO) teaching model on students' learning achievement in General Science.

Interpretation

The above Table shows that calculated t value (8.708) is higher than tabulated value (2.09). Therefore the hypothesis is stating that there is a significant difference in performance of students in experimental group is hereby rejected and significant difference of performance of students in control group and experimental group in post-test where students in experimental group attained higher mean score(54.65) than the students in control group(39.40). That means that student have shown the great difference of understanding after the experiment. Students performance in post test is also presented below in graph:

Graph No. 4



The following major findings were drawn from the analysis of data.

- The result came out that there was no significance difference between both group (control and experimental) students in Pre-test. Both groups have shown the same result. This means that before the experiment the students of both groups have same understanding and knowledge about the content. They were appeared similar in their pre-test.
- The findings of the result came out that there was a significance difference in result of the both groups (Experimental and Control) students in post- test. After the experiment, students of experimental group show different result than control group and this difference of result has proved that how much the new method is been liked by the students. It was concluded from the result of teacher made Pre-test that there was no significance difference between the students of both Group (Experimental and Control) before the beginning of the Experiment. It was concluded from result that there was a significance difference of performance in teacher made post test of general science among the students of both group (Experimental and Control). It was concluded from the finding that students in Experimental Group (taught through graphic organizer teaching model) performance was better than students in Control Group (taught through traditional method).

Keeping in view the findings of the present study it is suggested that the use of Graphical Organizer Model can make learning easier for the students and they can understand concepts more easily through graphic organizers. As in present study

experiment for the study was conducted in a female school. Further researcher may be carried out to include male and female, public and private sector school and comparison in performance through use of graphic organizer may be investigated to determine the differences between different sample groups and teachers may be trained specifically in how to develop and how to use of Graphical Organizer Model for explanation of concepts. Lesson plans that the researcher has developed may be used as model lessons for teaching of science in class 6th and further lesson plans may be developed on this model. Furthermore the effect of using Graphical Organizer Teaching Model in teaching of other subjects may be investigated and GO may be used for developing Graphical skills in students to portray their ideas.

References

- Arned, R (2001) .Learning to Teach, New York: McGraw Hill book Company, Inc
- Antonia Darder, Marta Baltodano, Rodolfo D.Torres. (2003). The Critical Pedagogy Reader, Published in by Routledge Falmer. (p-421)
- Arif, M.H. (1997) Advanced Education Psychology. Lahore; Feroze Sons Publications.
- Ausubel, D.P. (1963) The Psychology of Meaningful Verbal Learning. New York Grune and Stratton.Boyle, J. R., & Weishaar, M. (1997). The effects of expert-generated versus student-generated cognitive organizers on the reading comprehension of students with learning disabilities. Learning Disabilities Research & Practice, 12(4), 228-235.
- Bhalwankar, A.G. (1989). Models of Teaching. Bombay College of Education and Department of Continuing and Adult Education and Extension work.Bruce Joyce and Marshall Weil, Models of Teaching, Second Edition 2009, Prentice Hall, Inc, Englewood Cliffs, New Jersey 07632(p-77)Charles E. Skinner, (1984). Educational Psychology, Fourth Edition. Prentice Hall of India Private Limited New Delhi. (p 20-21)
- Donald. C. Orlich, Robert J. Harder, Richard c. Callahan, Michael S. Trevisan, Abbie H. Brown, Teaching Strategies: A Guide to Effective Instruction 2009 (p-152).
- Diane E. Kern, PhD, Praxis 11: Principles of learning and Teaching, Wiley Publication, Inc 2006 (p-106).
- David H. Jonassen, the Technology of Text Volume Two Principles for structuring, designing and Displaying Text 1985(p-177).
- Donna M. Mertens, (1998), Research Methods in Education and Psychology, Integrating Diversity with quantitative and Qualitative Approaches. London SAGE Publications international Educational and Professional Publisher
- Darolyn E. Jones, Painless reading Comprehension, Barron Educational Series, Inc New York 2004(p 14-16)
- Diane (2009) Essential Readings on Comprehension, International Reading Association, Inc, p (68-69).
- Glen Myers Blair, R. Stewart Jones, Ray H. Simpson, Educational Psychology, Second edition, The Macmillan Company; New York 1954 (p 236-238)
- G.N. Prakash. Srivatava, Perspective in Teacher Education, Published and Printed by Ashok Kumar Mithal Concept Publishing Company New Delhi, 2004 (p-73)
- Gardill, M. C., & Jitendra, A.K. (1999). Advanced story map instruction: Effects on the reading comprehension of student with learning disabilities. The Journal of Special Education, 33(1), 2-17.

- Hope .J. Hartman, Metacognition in learning and instruction; theory, research and practice, Published by Kluwer Academic Publishers 2001 (p -49)
- Howard Pitler, Matt Kahn, (2007). Using Technology with Classroom instruction that works. United States of America. ASCD publications (p-73)
- Hudson, P., Lignugaris-Kraft, B., 7 Miller, T. Using content enhancements to improve the performance of adolescents with learning disabilities in content classes. *Learning Disabilities Research & Practice*, 8(2), 106-126.
- John M. Gregory, the Seven Laws of Teaching, Copyright BiblioLife Reproduction Series 1886(p-5).
- Joel .J. Mintzez 2005 Teaching Science for understanding, Elsevier Academic Press Publications P (78-80)
- Kathleen .Kay, b. Burke, K. Burke, How to Asses Authentivc learning, published by Corwin SAGE Company 2009(p-129)
- Linda. B. Nilson, Teaching at its Best A Research Based resource for College Instructor, Third Edition, Published by Jassey Blass, 2010 (p-242)
- Laurie Materna, Jump start the Adult Learner: how to engage and motivate adults 2007 Sage Publications Company (p-95)
- L.B.Curzon, Teaching in Further Education, Fifth Edition, Published by Cassell in 2001(p 20-21)
- L. R. Gay, (1992) Educational Research Competency for Analysis and Application, Florida International University, Reproduced by National Book Foundation Islamabad.
- Mufti M Mukarram Ahmed, Encyclopedia, Anmol Publications PVT LTD 2005, (p-183).
- Marshall Brain, Emphasis on Teaching 1997, www.bygp.com (p-2) (time6:25).
- Mujibul Hassan Siddiqui, Prof. Mohd. Sharif Khan, Models of Teaching Theory and Research 1991, Ashish Publishing House New Delhi-110-026(p 5-6).
- Mayer, D.G. (1979). *Psychology*. Worth Publishers.
- Patti Drapeau, Great Teaching with Graphic Organizers; Lesson and Fun-shaped Templates, Printed in 1999(p-7, 8).
- Puri, U. (1997). *Teaching Techniques* .New Delhi Paragon Publications.
- Richard, R. (1991) *The Context of Language Teaching*. London Cambridge University.
- Richard D. Parsons, Stephanie Lewis Hinston, Deborah Sardo-Brown, West Chester University 2001, Printed in Canada.
- Robert J. Marzano, Debra Pickering, Jane E. Pollack, Classroom Instructions that Works Research Based Strategies for increasing Students Achievement, ASCD Publications, 2007 (p-119).
- Rose .A. Uteley, Theory and Research of Academic Nurse Educators: Application to Practice, Publisher Kevin Sullivan 2010 (p-24).
- Siddique M.H (2005). *Techniques of Teaching*, New Delhi: A.P.H. Publishing Corporation.
- Sandra F. Reif, Julie A. Heimburge, How to reach and teach all students through Balanced literacy, Published by Jossey-Bass, 2007(p-40).
- Unger, H.G. (1996). *Encyclopedia of American Education Facts and Files*. New York.
- W.A.Dood, the Teacher at Work, Oxford University Press, 1970. (P-30, 35, 37)
- www.wikipedia.com August, 22-23, 2010, Time 8:45pm).
- Walch (2005) Content area Graphic Organizer social Studies J. Weston Walch, Publisher P-(5-8) Editor of Teaching English Article on 11 September 2008, www.teachingenglish.org.uk/think/article/graphic-organizers retrieved on December 30, 2010, time 3:13 pm.
- www.ncrel.org/sdrs/areas/issues/studentslearning/lrlgrong.htm) retrieved on August 20, 2010 Time; 1045pm.
- www.wikipedia.com August 22-23, 2010, time 8:45pm)
- www.enchantedlearning.com August 20, 2010, Time; 12:30am)
- www.inspiration.com/examples/inspiration_ August 19, 2010, Time 09:40pm)
- www.enchantedlearning.com/graphicorganizers August 18, 2010, Time 10:15 pm

Treatment Plan for Experiment

Table No. 1

Group	N	Pre-Test	Treatment	Post-Test
Control (Randomly Selected)	20	T.M.T	Traditional Teaching Method	T.M.T
Experimental (Randomly Selected)	20	T.M.T	Graphic Organizer Teaching Model	T.M.T
Total	40	(T.M.T= Teacher –Made Test, N= Number of students).		

Analysis of Data and Interpretation

Table: No 2 Age of the Students in the Experimental group:

Age Group	No. of Students in Exp	No. of students in Control
10-11 years	18	16
12-13 years	02	04
Total	20	20

Table No. 3 Number of Students in Group.

Group	N	Percentage
Control	20	50%
Experimental	20	50%
Total	40	100%

Table No. 4. Comparison of Results of Students of (Experimental and Control Group) in Pre-test

Group	N	Mean	df	t	significant			
Control 38	20	8.75	38	.168	.867	Experimental	20	8.85

Level of Significant at .05

Table Values 2.09

Table No. 5. Comparison of Results of Students of (Experimental and Control Group) in Post-test

Group	N	Mean	df	t	significant
Control	20	39.40	38	8.708	.000
Experimental	20	54.65	38		.000