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EFFECTIVENESS OF GRAPHIC ORGANIZERS ON ACHIEVEMENT

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Abstract

The science is an intellectual action carried on by human beings that is planned to discover data about the natural universe in which human beings live and to discover the methods in which this data can be organized into meaningful forms. An attempt is being made to assess an existing status regarding the use of teaching Method as well as to develop the program on Graphic Organizers and find out the effectiveness on the achievement in Science subject. The objective of the research to develop program on Graphic Organizers and find its effectiveness on achievement in Science subject. Multi-method research was adopted, by using survey method, researcher assess the existing status regarding the use of teaching methods. Researcher developed program on Graphic Organizers for Science subject of viiith standard students. Researcher used Experimental method with equivalent group design and conducted pre and posttest. Data analyzed using t test after normality test were conducting using SPSS program.so study concluded that researcher developed program on Graphic Organizers is useful to improve the achievement of viiith standard students of Science subject.

Key Words: *Graphic Organizers, Achievement.*

INTRODUCTION:-

The science is an intellectual action carried on by human beings that is planned to discover data about the natural universe in which human beings live and to discover the methods in which this data can be organized into meaningful forms. A simple purpose of science is to distinguish the order that exists amongst and between various information. The science involves more than the gaining of knowledge in the subject. It's the organized and systematic inquiry into the natural universe and it is importance. The science is about gaining an often and deeper useful understanding of the universe. The science is a way of passing knowledge from one generation to some other. And so we can build our knowledge to solve increasingly complex troubles related to our productivity, existence and happiness. The science is the answer to all horrifying doubts.

There are various categories include conceptual, hierarchical, cyclical, and sequential. Conceptual Graphic Organizers (Struble,2007). A conceptual graphic organizer is suitable for

presenting a central idea with supporting information. Conceptual graphic organizers include concept maps, Venn diagrams, and KWL.

Hierarchical graphic organizers rank information according to such qualities as importance and have sublevels to show such. Examples of these include classifying charts, branching diagrams, and topic/subtopic webs.

Sequential Graphic Organizers In order to show events that happen in sequence, one uses a sequential graphic organizer. It include cause/effect, problem/solution, and story boards.

Cyclical Graphic Organizers are designed to show the natural cycle of various concepts. A commonly used cyclical graphic organizer is an organism life cycle chart.

The following figure shows Hierarchical graphic organizers of Rocks and minerals:

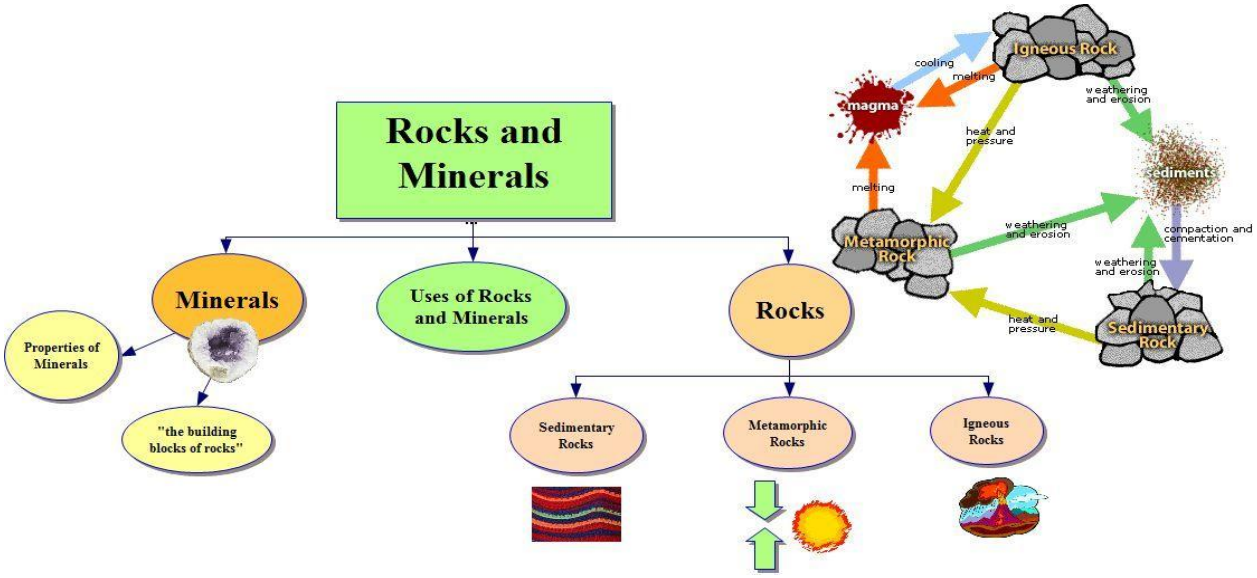

Figure 1 :Classification of Rocks and Minerals (*https://education.alberta.ca/media/482311)*

Curiosity has been the greatest motive power of scientific research. Graphic organizers facilitate learning in content areas by providing clear visualizations of ideas and facilitating student reflection. Therefore it's necessary to develop the graphic organizers to increase the scientific attitude and interest in science today, hence it is essential to conduct various programs based on graphic organizers for improve the achievement in science subject.

REVIEW OF RELATED LITERATURE:-

Ermis (2008), research has been performed *to examine the effects of graphic organizer use on students with learning difficulties*. And it is found that the use of graphic organizers to encourage comprehension, researchers have seen benefits in student learning. Results from

the posttest favored the use of graphic organizers to manage information when reading informational texts.

Robinson (2006), explored the *use of partially complete graphic organizers in order to promote student independence.* It is found that with partial graphic organizers, students are provided with a graphic organizer that has portions already complete in order to guide comprehension while students fill in the remainder of the graphic organizer independently

Horton, Lovitt, & Bergerud (1990), *the use of graphic organizers was investigated using secondary students in social studies and science*. In this case, the researchers examined not only students with learning disabilities, but also students in general education. Specifically, this study compared the use of teacher-directed graphic organizers and self-study using graphic organizers. It is found that teacher-directed implementation of graphic organizers was more effective in facilitating understanding of student.

Similarly, Darch and Carnine (1986), focused their research on *fourth-, fifth-, and sixth grade students with learning disabilities to examine how the use of graphic organizers impacted their learning in social studies and science classes*. It found that, the use of graphic organizers in acquiring information is beneficial, but also furthers the research in finding that graphic organizers are more effective when taught and explained by a teacher.

STATEMENT OF THE PROBLEM:

To assess an existing status regarding the use of Teaching Methods as well as to develop the program on Graphic Organizers and find out the effectiveness on the achievement of VIIIth Standard students of Science Subject.

DEFINITION OF KEY TERMS:

- ✓ **Effectiveness**

Conceptual Definition:

"Producing result that is wanted or invented, producing a successful result." (Hornby, 2000).

Operational Definition:

Effectiveness means a significant difference in the scores of Achievement Test (Post-test) of students of the Control and Experimental Group in Science subject of viiith standard after implementation of the Program of graphic organizers.

- ✓ **Graphic Organizers:**

Operational Definition:

Graphic Organizers mean an action plan based on Conceptual graphic organizers include concept maps, Venn diagrams, and KWL., Hierarchical includes classifying charts, branching diagrams, and topic/subtopic webs., Sequential include cause/effect, problem/solution, and story boards and Cyclic graphic organizers of topic Air, water and agriculture for viiith standard students of science subject

- **Achievement:**

Conceptual Definition: The need to raise standards of achievement in education. (Hornby, 2000).

Operational Definition:

Achievement means the score obtained in Pre and Post Test by the students Science subject.

OBJECTIVE OF THE STUDY:-

1. To assess the existing status regarding the use of Teaching Methods by Teachers of viiith standard of science subject.
2. To develop a program based on Graphic Organizers for students of viiith standard of science subject.
3. To find out the effectiveness Graphic Organizers on Achievement of students of viiith standard in science subject.

HYPOTHESIS:-

1. **Research Hypothesis (H_1):**

There is a difference between the mean scores of Students of Experimental and Control Group on the post test.

2. **Null Hypothesis (H_0):**

There is no significant difference between the mean scores of students of Experimental and Control Group on the post test.

ASSUMPTION:-

1. The use of graphic organizers to encourage comprehension of science and benefits in learning. (Ermis,2008).
2. The graphic organizers are more effective when taught and explained by a teacher. (Darch and Carnine,1986)

SCOPE, LIMITATION AND DELIMITATION:-

SCOPE:

1. The research is conducted in Maharashtra State.
2. This study is related to viiith standard students of Science subject.

LIMITATION:-

1. The attitude, interest and fatigue of Teacher and students are beyond the control of researcher.
2. The Teacher and students who were present at the time of data collection are included in the study.

DELIMITATIONS:-

1. This survey is delimited to viiith standard students of science.
2. Only two Schools from Pune district are included in the Experiment.
3. The research study includes only Marathi Medium School.
4. This study is delimited to the use of Graphic organizers for classroom teaching program.
5. Only Three units of Science from syllabus are taken into account to frame the program.

PLAN AND PROCEDURE OF STUDY:-

The present study is based on Applied Research and Multi method was used. In survey research 52 Science Teacher selected as a sample, sample selected as purposive sample method, Researcher made Questionnaire used as tool of data collection. Graphic Organizers program developed by Researcher. Developed program implemented on 60 students of Science. Researcher used equivalent group design for Experiment.

DATA ANALYSIS:-

In the present study survey study data analyzed using percentage. For the experimental study descriptive and inferential analysis used. Mean, median and Standard deviation calculated. T-test' used to determine the difference between pretest and posttest scores in science of experimental group after normality test were conducting using SPSS program.

HYPOTHESIS TESTING:-

Table No: 01: Paired T test for posttest of Experimental and control group

Group	N	Mean	S.D.	df value	Paired T-value	Effect Size	Decision
Control	30	24.73	3.62		8.49	0.88	

Experimental	30	28.30	4.38	29	Significant

Observations:

The result of the experiment shows the t value of posttest of Experimental group and Control Group is 8.49 which is significant at 0.5 level. Also the calculated size effect is 0.88 (Moderate Effect) indicates that the program was effective. It reflects that there were a significant difference between the achievement of students of Experimental and Control Group after the implementation of the Program of Graphic Organizers.

Hence the Null Hypothesis is rejected and therefore the Research Hypothesis is accepted i.e. 'There is a difference between the mean scores of students of Experimental and Control Group on the post test.

MAJOR FINDINGS:-

From objective: 1

1. For Science subject most of the Teacher were aware about Teacher Oriented Methods and not aware about Student Oriented Methods.
2. Maximum Science Teacher not used the graphic organizers at the time of teaching.

From objective: 2

Researcher made graphic organizers program were useful and positive responses given by the students

From objective: 3

The achievement of Science subject of Experimental Group was increased than the achievement of Science subject of Control Group because of the implemented Program of graphic organizers in Science subject. The developed Program of graphic organizers was effective.

DISCUSSION ON FINDINGS:-

The present research study was conducted by using the Multi Research Methods such as; Survey Method, Product Development Method and Experimental Method. The survey Method was conducted to assess the existing condition regarding the use of Graphic Organizers by the Teacher of Science subject of viiith standard. The findings regarding the Survey reflected that Teacher are aware about teaching methods of science but they not used graphic organizer frequently in classroom teaching. By considering this result one of the previously done researches by Darch and Carnine (1986), it found that, the use of graphic

organizers in acquiring information is beneficial, and graphic organizers are more effective when taught and explained by a teacher.

The objective number two of the present research study was to find out the effectiveness of the program on the achievement of students in science subject. For fulfill of third objective Experimental Method was followed. This objective was assessed by conducting Achievement Test on the students' science subject. The test was administered on Experimental and Control Group. The finding indicates that the achievement of student of Experimental Group was increased than the achievement of students of Control Group because of the implemented Program of graphic organizers in Science. The developed Program of Graphic organizers was effective. Similar finding regarding the effect of strategies were found in the research of Ermis (2008), and Robinson (2006), that the use of graphic organizers to encourage comprehension, researchers have seen benefits in student learning. Also results from the posttest favored the use of graphic organizers to manage information when reading informational texts.

CONCLUSION:-

The Graphic organizers increased the achievement of the students of viiith standard of the Experimental Group in Science subject.

CONTRIBUTION OF THE STUDY TO THE FIELD OF EDUCATION:

The present study is helpful to the Teacher -

- To understand the theoretical and practical aspects of the graphic organizers.
- To acquaint with various graphic organizers in teaching.
- To plan their teaching by including graphic organizers.

The present study is helpful to the students -

1. To get an idea about students interest of science.
2. To learn the things with group or peers with motive.
3. To do self-study by using various graphic organizers.

The present study is helpful to the Researchers -

- To acquaint with research methodological aspects of the present study.
- To studying similar problem but in other subject.
- To select research design, development of tools, development of product & data analysis

REFEFENCES:

Alberta Education. (n. d.) Graphic organizers. Retrieved on Nov. 05, 2016 from https://education.alberta.ca/media/482311/is.pdf

Best J. W., & Kahn J. V. (2012). Research in Education (10th ed.). New Delhi; PHI Learning Private LTD.

Bruce J., Marsha W., & Emily C. (2011). Models of Teaching (8th ed.). New Delhi; PHI Learning Private ltd.

Chellamani, K., & Nair, S. (June 2012). Integration of Constructivism with digital Port folio, Edutracks, vol.12, No. 1.

Khan, S. H. (Sep 2014). Constructivism: An innovative teaching Method in Science, Edutracks, vol.14, No. 12.

Mangal, S.K., & Mangal U. (2010). Learner, Learning and Cognition, Ludhiyana; Tondon publication.

My Pychomentor (n.d.) Interactive Teaching Techniques in Lecture. Retrieved on Sept. 8, 2008 from www.mypsychmentor.com

National Central regional Educational Laboratory. (1991). Effective Teaching Strategies. Retrieved on Sept. 8, 2008 from info@ncrel.org

Nanda, V.K. (1998). Modern Techniques of Teaching, vol. 4, New Delhi; Anmol Publication Private Ltd.

Sharma S. (Eds) Constructivist Approches to teaching learning handbook for teachers of secondary stage, New Delhi; NCERT.

Selvam, P. (2014). Teaching- Learning Paradigmas, New Delhi; Random publication.

Wendy, B., & Stephen, B. (2008). 100 Ideas for teaching Creative Development, London; M.P.G. Books Ltd.