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EFFECTIVENESS OF USING GRAPHIC ORGANISERS IN ENHANCING SCIENCE LEARNING AMONG VII STANDARD STUDENTS

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Abstract
Graphic organisers provide a visual method of developing, organising and summarising students learning. Even though there are a numbers of methods which are advocated for teaching science, graphic organisers have some uniqueness within its approach. The present study investigates the effectiveness of using graphic organisers in enhancing science learning among VII Standard students.

Introduction

In the current scenario, children are exposed to diverse ideas, people and viewpoints increase as rapidly as the changes in the society. Many children knows how to read but unfortunately not everyone is a good reader who can derive meaning from a written material and go on to analyse and apply that meaning. So it is the responsibility of the teachers to enhance the student's understanding on science concepts. Nowadays, most of the teachers are always looking for new ways to help students to classify and communicate their ideas more effectively. A visual guide, such as a graphic organizer, can do just that, as well as help students plan and structure their ideas in an organized manner.

Graphic Organizer

A graphic organizer is a teaching and learning tool that is used to organize information and ideas in a way that is easy to comprehend and internalize. By integrating text and visuals, graphic organizers show relationships and connections between concepts, terms, and facts. According to Ausubel, (1960) the purpose of the organizer is to activate students' prior knowledge and relate the new material to the previously stored information providing optimal anchorage and rendering the new material more familiar and meaningful.

Graphic organizers can be used in all grade levels, and have proven to be effective learning tools for gifted children and students with special needs. And with adult learners, graphic organizers can help enable the connection between previous knowledge and newly acquired knowledge. A graphic organizer is a powerful, visual learning tool that teachers use to help students organize their ideas. They can also be used to clarify or simplify complex concepts, help with problem solving or decision making, or be used to plan research or brainstorm ideas. Graphic organizers are visual thinking tools that make pictures of our thoughts. The pictures demonstrate relationships between facts, concepts, or ideas, and guide the students to think to design the map or diagram.

Significance of the study

In our education system, most of the schools follow only traditional way of teaching the science subject. Graphic organisers may look elementary at first glance, but provide frameworks for connecting new ideas with schema. There are compelling reasons why using graphic organizers in the classroom is beneficial. Graphic organizers (GOs) make materials easier to comprehend and remembered than when lessons are just dictated or copied. It makes ideas more specific, giving the students a chance to grasp science concepts at their level of understanding. When they are able to

keep a clear mental picture of the topic discussed, it aids them in explaining what they have mastered orally.

Using graphic organizers in the classroom support teachers in making concepts easier to grasp by students about topics they need to study. Therefore with the use of GOs teachers may improve the academic achievement of the students. This study is an attempt to find out the effectiveness of GOs in enhancing science learning.

General objectives of the study

To establish relative effectiveness among different instructional strategies viz., Conventional lecture method and use of graphic organisers in enhancing science learning.

Hypotheses of the study

- There is no significant difference between mean score of pre-tests of control and experimental groups.
- There is no significant difference between mean scores of pre-test and post-test of control group
- There is no significant difference between mean scores of pre-test and post-test of experimental group.
- There is no significant difference between mean scores of post-tests of control and experimental groups.

Methodology

The present study was conducted in a reputed CBSE school in Coimbatore District. 58 students were taken as the sample for the present study. Simple Random Sampling Techniques was used for select the sample.

Tool to be used

1. Pre-test and Post-test was conducted to the VII Standard Students and
2. Achievement test on nutrition in science was developed by the investigators.

Statistical techniques used

Statistical analysis:

The data collected were analyzed by using descriptive and inferential analysis. The following statistical techniques were employed for the analysis and interpretation of the data.

- Mean
- Standard deviation
- "t" – test.

Table-1,Mean (M), Standard deviation (SD), of the pre – tests scores of control group and experimental group.

Group	Test	N	M	SD	t-value	Remarks
Control group	Pretest	30	67.83	10.64	0.6	Not significant
Experimental group	Pre Test	30	66.5	9.02		

From the table (1) it is observed that the calculated t' value 0.6 is less than the theoretical value. Hence null hypothesis is accepted i.e. there is no significant difference between the mean scores of pre- test of control and experimental group on academic achievement in science.

Table (2)Mean (M), Standard Deviation (SD) and 't' Value of the pre – test and post – test scores of control group on academic achievement in science

Group	Test	N	M	SD	t-value	Remarks
Control group	Pre test	30	67.83	10.64	0.58	Not significant
	Post test	30	69.33	9.35		

From the table (2) it is observed that the calculated t' value 0.58 is less than the theoretical value. Hence null hypothesis is accepted i.e. there is no significant difference between the mean scores of pre- test and post – test scores of control group on academic achievement in science learning.

Table -3,
Mean(M),Standard Deviation (SD) and 't' Value of the pre – test and post – test scores of experimental group on academic achievement in science

Group	Test	N	M	SD	t-value	Remarks
Experimental group	Pre test	30	66.5	9.02	4.23	Significant
Experimental group	Post test	30	79.33	8.17		

From the table (3) it is observed that the calculated' value 4.23 is greater that the theoretical value. Hence null hypothesis is rejected and i.e. there is significant difference between the mean scores of pretest and post-test of experimental group on academic achievement in science.

Table -4,Mean (M), Standard Deviation (SD) and't' value of the post – test scores of academic achievement in science with respect of control group and experimental group.

Group	Test	N	M	SD	t-value	Remarks
Control group	Post test	30	69.33	9.35	4.64	Significant
Experimental group	Post test	30	79.33	8.17		

From the table (4) it is observed that the calculated' value 4.64 is greater than that the theoretical value. Hence null hypothesis is rejected i.e. there is significant difference between the mean scores of post - tests of control group and experimental group on academic achievement in science.

Conclusion

The present study concludes that the usage of graphic organisers in enhancing science learning is more effective than the traditional method. It is found that the students score more marks when they are taught using graphic organisers. This study suggests that the teacher may also be trained to practice using graphic organisers and adopt appropriate teaching strategies to meet the individual needs in the classroom.

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