

Effectiveness Of Synectics Model Strategy In Relation To Conventional Teaching Of Physics Among Higher Secondary Students

Mrs. M. Punithavalli¹, Dr. R. Sahaya Mary²

Abstract

The main objective of the study was to find out if there is any Effect of Synectics Model on Physics Teaching. The experimental method was adopted for the present study. A sample of 40 students from two schools in Government higher secondary school Chengalpattu district and Municipal higher secondary school Chennai district. Thus only 20 students were selected from each school. 25 students were considered Control group and other 25 students is Experimental group was selected randomly. Achievement tests in physics for pre-test and post-test were prepared by the investigator with help of research supervisor. Mean, standard deviation and t test was used for analysing the data. The major finding was that there is more effect of synectics model on physics teaching.

Key word: Teaching Effectiveness, Synectics model, Physics subject.

INTRODUCTION

Synectics model was developed by William J.J. Gordon (1918) began formulating the Synectics method and originating in the Arthur D. Little Inventer design unit in (1950) with a series of studies designed to discover the psychological mechanisms of creative thought. At that time, most psychologists considered creativity as mystical, subconscious process that science could not measure without disrupting the process itself. Gordon, however believed identifying the sub conscious processes and bringing them into conscious thought would not disrupt the creative process in fact, he believed that doing so would enhance it. When the Synectics team expanded its study of individuals to include collaborative groups, they observed the same psychological states. In addition, they found that social interaction made the creative process more efficient. Because of these findings, the synectics has promoted its model as a group activity, and an equally operative for individual use.

SCOPE OF THE STUDY

The scope of this study restricted to physic at higher secondary level prescribed by board of secondary education. The synectics model of teaching is a completely new and novel strategy of teaching in the learners, is supported to provide them some novel and funny experiences through the use of analogies which happens to be its essential features. Further this strategy encourages divergent thinking among the learners and attempts to present a concept in a new approach which may develop among the learners a desire or motive to achieve something unique.

¹Ph.D. Research Scholar, Department of Education, Institute of Advanced Study in Education, Saidapet, Chennai – 600 015, Tamil Nadu, India

²Asst. Professor, Dept. of Physical Science – Education, Institute of Advanced Study in Education, Saidapet, Chennai – 600 015, Tamil Nadu, India

EFFECTIVENESS OF SYNECTICS MODEL STRATEGY IN RELATION TO CONVENTIONAL TEACHING OF PHYSICS AMONG HIGHER SECONDARY STUDENTS

Synectics as a group activity may also develop a sense of competitiveness and a strong sense or motive to achieve among the learners by means of introducing novel analogies. This study is primarily concerned with how much that the synectics model of teaching influences the achievement in physics.

STATEMENT OF THE PROBLEM

The title of the present study is *“Effectiveness of Synectics Model Strategy in Relation to Conventional Teaching of Physics among Higher Secondary Students”*.

OBJECTIVES OF THE STUDY

1. To find out the difference between the means scores of Pre-test in Physics of the Control group and Experimental group.
2. To find out the difference between the means scores of Post-test in Physics of the Control group and Experimental group
3. To find the difference between the means scores of Pre-test and Post-test in Physics of the Control group
4. To find the difference between the means scores of Pre-test and Post-test in Physics of the Experimental group

HYPOTHESES OF THE STUDY

1. There is no significant difference between the means scores of Pre-test in Physics of the Control group and Experimental group.
2. There is no significant difference between the means scores of Post-test in physics of the Control group and Experimental group.
3. There is no significant difference between the means scores of Pre-test and Post-test in Physics of the Control group
4. There is no significant difference between the means scores of Pre-test and Post-test in Physics of the Experimental group

METHODOLOGY

TOOLS USED

The researcher has selected the following tools and used them to collect the data for this study.

- ✓ Synectics Model Strategy Technique in physics.
- ✓ An Achievement test prepared for pre-test in physics, Synectics Model of teaching and a post-test in physics

RESEARCH PROCEDURE

In the present study experimental research method was adapted for its suitability and accuracy. Two groups of students namely the Experimental and Control group were taken for the study. The control group was taught through Conventional method of teaching and Synectics Method was used for teaching the Experimental group.

SAMPLE

The sample selected for this Experimental was selected and adopting random sampling. The 20 pupils studying XI standard in Government higher secondary school Chengalpattu district were treated as Experimental group and The 20 pupils studying XI standard in Municipal higher secondary school, Chennai district were treated as the Control group.

EXPERIMENTAL PROCEDURE

To find out the difference in the Effectiveness of physic learning though Synectics Model and through conventional method, the researcher adopted the two groups Pre-test / treatment Post-test experimental design.

STATISTICAL TECHNIQUES

The data obtained were analysed by using appropriate statistical techniques such as Mean, Standard Deviation, t-test.

ANALYSIS AND INTERPRETATION

Table – 1 Mean, Standard Deviation and t-values of the Pre-test by the Experimental group and the control group.

Group	Mean	S.D	t - Value	L.S
Experimental	27.25	4.20	10.705	0.01
Control	19.30	3.15		

From the above table -1 present the mean of the Experimental group was 27.25 and that of the Control group was 19.30, t – value was calculated as 10.705 was significant at 0.01 level of significance of Pre-test by the Experimental group and the control group.

Table – 2 Mean, Standard Deviation and t-values of the Post-test by the Experimental group and the control group.

Group	Mean	S.D	t - Value	L.S
Experimental	53.00	13.4	6.115	0.01
Control	39.30	6.20		

From the above table -2 present the mean of the Experimental group was 53.00 and that of the Control group was 39.30, t – value was calculated as 6.115 was significant at 0.01 level of significance of Post-test by the Experimental group and the Control group.

Table – 3 Mean, Standard Deviation and t-value of the Pre – Test and Post-test taken by the Control group.

Group	Pre -Test		Post - Test		t - Value	L.S
	Mean	S.D	Mean	S.D		
Control	10.70	2.51	15.50	2.61	5.15	0.01

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From the above table -3 present the mean of Pre – test was 10.70 and that of the post test was 15.50, while S.D was 2.51 for the pre – test and 2.61 for the post – test. t – Value was calculated as 5.15 was significant at 0.01 level of significance of Pre – Test and Post-test taken by the Control group.

Table – 4 Mean, Standard Deviation and t-value of the Pre – Test and Post-test taken by the Experimental Group.

Group	Pre - Test		Post - Test		t - Value	L.S
	Mean	S.D	Mean	S.D		
Experimental	12.02	2.6	19.10	2.8	8.80	0.01

From the above table -4 present the mean of Pre – test was 12.02 and that of the Post- test was 19.10, while S.D was 2.6 for the Pre – test and 2.8 for the Post – test. t – Value was calculated as 8.80 was significant at 0.01 level of significance of Pre-test and Post-test taken by the Experimental group.

FINDINGS

1. It was found that there is significant difference between the mean scores of Pre-test in Physics taken by the Experimental group and the Control group. The Experimental group showed better improvement after the treatment.
2. It was found that there is significant difference between the mean scores of Post-test in Physics taken by the Experimental group and the Control group.
3. It was found that there is significant difference between the mean scores of the Pre-test and the Post-test in Physics of the Control group. Student do understand when taught through the conventional method but not as when taught thorough the Synectics Methods.
4. It was found that there is significant difference between the mean scores of the Pre-test and the Post-test in Physics of the Experimental group. Thus it can infuse that the Synectics Model is effective in bringing improvement on the Achievement of XI standards student of Physics for the Experimental group.

EDUCATIONAL IMPLICATION

- It was found that the Synectics model was significantly effective with the experimental group in achieving the objective. Physics interested students should use this model in the class to make the concepts clear to the students.
- It is found that if once the concepts are clear there is no difficulty for the learner to understand the physic subject. Further the Physics teachers should be trained to use the synectics model effectively in the classroom
- Government can also arrange the programs to train and motivate the school teachers to actively prepare such models.
- Drilling and revision can be easily done.
- This model is even useful for diagnostic and remedial teaching.

SUGGESTIONS FOR FURTHER RESEARCH

- ❖ The study can be attempted for the subsample based on English / Tamil medium, rural / urban, private / government populations.
- ❖ The study can be replicated on students with learning disabilities, special needs, and social disadvantage and of different classroom learning environment.
- ❖ A study on the interaction effect of models of teaching and studying approach on problem solving ability can be conducted for the population of teacher trainees.

CONCLUSION

The present study was conducted to find out the Effectiveness of Synectics Model Strategy in Relation to Conventional Teaching of Physics among Higher Secondary Students. It was found that in the synectics model of teaching method students were actively involved in the process of learning which enhanced their achievement. Hence it can be concluded that synectics method of teaching can enhance achievement and creative learning as well as the students.

REFERENCES

1. **Arkasali, R. N. (2004).** Effectiveness of the Synectics model of teaching in Biology. National Psychological Corporation, Agra. Vol 32.
2. **Aggarwal Y.P (2002)** Statistical methods, concepts, application and computation, New Delhi. Sterling Publication private limited.
3. **Baveja, B (1989).** Information Processing Models of teaching in the Indian classroom. Indian Educational Review. Vol 24(1), 143-49.
4. **John W Best (1975)** Research in Education, New Delhi. Prentice hall of India private limited.
5. **Ramiszowski A.J (1986)** Developing Auto-Instructional Materials. New York, Nicholas publication.
6. **Sunil Behari Mohnty (2001)** Computer Assisted Instruction. Journal of All india association for Educationl Research. Vol.13.