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Effectiveness of Synectics Techniques in Teaching of Zoology at Higher Secondary Level

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ABSTRACT: *Educationists are of the opinion that the educational problems relating to quantity and quality could be tackled by the proper utilization of synectics techniques. Synectics technology is a systematic way of designing, carrying out and evaluating the teaching learning process. A Synectics technique makes scientific attitude, critical thinking and creative intelligence more effective, understandable and meaningful. All types of resources are used to make the learning easy. Traditional teacher centered approach in the classroom has been shifted from teaching to learning. It is called student centered or techniques based approach, the students being the resources. The major objectives of the study were, (1) To study the effectiveness of synectics approach on teaching zoology. (2) To find out the extent of achievement in zoology of the students of standard XI. The researcher selected the students of 11th class of Government Higher Secondary School and two groups (Experimental groups and Control groups) were randomly selected from total available group. The equivalence of the groups was determined by equating the students of both groups on the pre-test scores three chapters of zoology were taught during the experiment to both experimental and control groups by two different students almost of the same classes and were intended to measure the outcomes of learning. The post-test was administered to both groups after twelve weeks. In order to secure data, pre-test, post-test were administered as research instrument. Data were tabulated, analyzed and interpreted in the light of objectives of the results. Tests of significance such as t-test were applied the effectiveness of teaching learning of zoology and Weakness of traditional approach at higher secondary level teaching in zoology. The analysis raveled that the application of synectics techniques as supplementary strategy in teaching zoology was more development because the use of synectics techniques increased interest and enhanced motivation levels. Synectics techniques as supplementary strategy were also found to be equally development for students'. On the basis of findings, researcher provides workable suggestion recommendations for enhancing the effective learning of students of zoology at higher secondary level.*

KEY WORDS: *Effectiveness, Synectics, Personal excellence, Imagination and Zoology*

I. INTRODUCTION

If we want to improve the quality of education in our country and cope with the challenges posed in recent years by the problems in education, we should pay proper attention to the changing strategy of instruction and efforts should be made introduce new methods and evolve new techniques of instruction suitable for our nation needs. A great revolutionary development in the field of education has been taking place in developed countries like USA, UK, Russia and Japan. A study conducted in India and abroad reveals that the wise use of educational technology is one of the most important factors which can improve the quality of teaching learning process and extend its coverage. Computer-assisted-instruction, multi-media approach to teaching, programmed instruction, video-assisted instruction, team teaching, co-operative learning etc are some of new strategies employed in improving the quality of classroom instruction. This becomes especially pertinent in India, in view of the National Policy on Education (1986) and the New Educational Policy (1992) and its programmes of action which envisage a dynamic use communication and educational technology for enhancing the instructional and learning inputs formal and non-formal educational arrangements. Communication technologies have influenced all walks of life i.e. recreation, business production, warfare, politics and education. Today technological and social changes are coming fast that they demand radical adjustments in the field of education. There is a serious move integrating Information Communication Technologies as a major priority in many

countries, these can enhance the possibilities of instruction and learning of all pupils at all levels of schooling. Considering the above aspects and problems in zoology teaching-learning process, the self learning (individualized imagination) has been one of the important areas of educational innovations in recent years which needs a thorough investigation as a supportive (reinforcement) strategy in class room teaching. Therefore, the researcher has been selected the present study on synectics techniques as an enforcement strategy in learning zoology. The researcher has identified synectics technique as a **self-imaginativ**e technique which could be used as reinforcement strategy in the present study.

SYNECTICS TECHNIQUES: The word "Synectics" is derived from the Greek word synectics, meaning collecting and fitting together of different and apparently irrelevant elements. Synectics theory is applied for integration of individual's diverse opinion in to a problem-stating and problem – solving matter. It is an operational theory for conscious use of preconscious psychological mechanisms present in man's creative activity. The scope of developing such a theory is to increase the probability of success in problem–stating and problem – solving situations. This increase depends on awareness of mechanisms which worked through to arrive at solution of fundamental novelty. Synectics, Inc was founded by a brilliant thinker named **J.J.Gordan**. Who earlier was a raiser of pig, master of a sailing schooner, a school teacher, a horse handler, a ski instructor, an inventor, an anther, a college lecturer, and a dabbler in history, biochemistry, physics, psychology, and philosophy in his college years?

Synectics technique is known as one of the creativity technique popularly applied for problem solving approach. It is very remarkable technique of group problem solving and to a non-initiate, which look like a mad method for finding solutions in an innovative way. Gordon's initial work with synectics procedure was to develop "creativity groups" within individual organizations. That is, group of persons trained to work together co-operatively to function as problem solvers or product-developers. In recent years, **Gordon** has adopted synectics technique for use with school children, and materials containing many of the synectics activities are now being published. The space age is processing fast old ideas are no longer apply. Much is required in the matter of creative potential of today's school children. Problems are looming us to consider how children may become at their best, and to search for new ways of helping children to develop their creative potential ability. "We know not what man revolutionary evolution is taking place in every sphere rapidly because of continued development of human thinking, human creative thinking to solve celestial problems. So evolution in children's education is absolutely necessary to make them to think creatively and make them a potential citizen of our country to face the challenging problems boldly. The aim of education should be "training the mind for creative thinking" and not be "stuffing the Brain to repeat like a parrot". Hence development of creativity thinking in school children from primary stage itself is indispensable and it is a herculean task to make the children a solid potential men power in the ensuing 21st century.

PROBLEM RESTATED: To what extent is the synectics technique effective upon teaching zoology to the students of standard XI?

OBJECTIVES OF THE STUDY:

[1] To study the effectiveness of synectics techniques on teaching zoology.
[2] To find out the extent of achievement in zoology of the students of standard XI

HYPOTHESIS:

The following hypotheses were framed for the study.

[1] There will be no significant difference in the mean scores for achievement in zoology in the pre-test between control group and experimental group.
[2] There will be no significant difference in the mean scores in achievement in zoology between the pre-test and post-test for the control group.
[3] There will be no significant difference in the mean scores achievement in zoology between pre-test and post-test for the experimental group.
[4] There will be no significant difference in the mean scores in achievement in zoology for post-test between control group experimental group

CONTENT: Three units in zoology for standard XI were considered for developing synectics techniques approach with the objectives of developing knowledge in the chosen unit.

SAMPLING DESIGN:

The sample constituted of 110 students for the final study. The studying in XI control group and experimental group were formed. The two groups were first matched before the treatment.

INSTRUMENTATION:

For the purpose of evaluating students' performance in this study the following tools were developed and validated.

[1] Synectics techniques
[2] Achievement test in zoology
[3] The content and the items of the above tools were subject to validation. Experts established the content validity.

Table-1 Mean and SD of achievement in zoology

Group	Pre-test scores			Level of significance
	Mean	SD	T value	
Control group	36. 70	8.08	0.77	NS
Experimental group	35.26	8.63		

Table-2 Mean and SD of achievement in zoology

Group	Control Group			Level of significance
	Mean	SD	t value	
Pre-test	36. 70	8.08	1.82	NS
Post-test	39.96	9.26		

Table-3 Mean and SD of achievement in zoology

Group	Experimental Group			Level of significance
	Mean	SD	t value	
Pre-test	35.26	8.63	7.77	S
Post-test	45.27	7.73		

Table-4 Mean and SD of achievement in zoology

Group	Post-test scores			Level of significance
	Mean	SD	t value	
Control group	39.87	9.26	4.99	S
Experimental group	45.27	7.44		

FINDINGS:

There was no significant difference in the performance of the control group and experimental group in the pre-test. This confirms that the control group and experimental group were matched. There was a significant difference in the post test performance of both the experimental group. This is due to the effectiveness of the reinforcement by way of conducting the tests and exposure to the students the question pattern and awakening of awareness. There was a significant difference between the performance of the control group and the experimental group in the post test. This is in evidence of the effectiveness of synectics technique approach.

CONCLUSION:

It could be observed through experimentation that synectics techniques was an advantages point over the traditional method in teaching zoology effectively synectics techniques may be built in for developing appropriate knowledge for the rest of the units. The students evidenced a lot interest in learning zoology through synectics techniques. The found the synectics techniques quite useful with respect to objective questions and concepts. The synectics technique was of great use. Those students can imagine view without any control. On the whole it could be observed that the synectics technique was effective in enhancing the achievement in zoology of the students of XI standard.

REFERENCE

[1] C.R.Kothari, Research methodology, New Age International. Pvt. Ltd, New Delhi, 2006.
[2] O' Hara, R.J. (1988). Homage to Clio. or, toward an historical philosophy for evolutionary biology. Systematic Zoology, 37, 142-155.
[3] Waterman, M. (1998) Investigative case study approach for biology learning: Bioscience journal of college Biology Teaching, 24(1), 3-10.
[4] Aikenhead, G.S. (1992). Logical reasoning in science and technology. Bulletin of science, Technology, & society, 12 (3), 149-159.
[5] Stewart, J. Vankirk, J. & Rowell, D. (1979). Concept Maps: A tool for use in Biology Teaching.
[6] Okebukola, P.A.O. (1986): The effectiveness of psychological learning model in Biology.
[7] Novak, J.D. (1970). The improvement of biology teaching Indianapolis, New York: Bobbs-Merill Company.
[8] Liras, A. (1994). Teaching and learning the biological sciences and biological education.
a. The journal of biological education, 26(3), 147-150
[9] Killerman, W. (1998). Research into biology teaching methods. Journal of biological education, 33(1). 4-9.
[10] Entwistle, N. (1981). Style of learning and teaching, London: Wiley.
[11] Bower, G.H. (1972). Mental imagery and associate learning In L. Gregg (ed.), cognition in learning and memory. New York: Wiley