

EFFECTIVENESS OF STRUCTURE-FUNCTION METHOD AS AN ACTIVITY BASED METHOD OF TEACHING BIOLOGICAL SCIENCES

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Abstract

The present research is an attempt to study the effectiveness of Structure-Function Method as an Activity Based Method of Teaching Biological Sciences. The eight standard students studying in secondary schools of Bhatkal city constituted Population for the study. Out of this Population, a random sample of 35 students formed the Control group and another random sample of 35 students formed the Experimental group. An Achievement test in Biological sciences constructed by the investigator was administered. The results showed that the performance of the students taught by Structure-Function Method is better than that of the students taught by the Conventional method of teaching

Keywords: *Activity Based Teaching, Academic Achievement.*



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Introduction:

“The structure-function method is one of the activity based methods of teaching Biological Sciences and it is an offshoot of the system analysis. This method emphasizes the study of structures and their functions. The structural method emphasizes the need for an ordered and systematic learning of the living body, while the function method emphasizes on learning and teaching. Thus it is an integrated activity based method of teaching which encompasses both structural method and functional method”.

Implementation of this Structure-Function method in the field of education has given the teachers an opportunity to enhance their teaching skills. They can concentrate on teaching the finer aspects of the object. This also allows them to be more interactive with the class, enabling in depth discussion of the subject. Structure-Function Method in science is effective and provides excellent learning experiences. Successful Structure-Function method activities carried out in teaching learning process provide concrete experiences and can be used for structuring future information for students.

Purpose of the study:

The present study aims at investigating Activity based method of teaching as one of the important methods of teaching science. It plays a significant role basically in the development of scientific attitude among the secondary students which is very much lacking nowadays.

Objectives:

- 1) To find out the effectiveness of Structure-Function Method employed in Teaching- Learning Process.
- 2) To measure the change in the level of academic achievement of the pupils as a result of Structure-Function Method as an Activity based Method of teaching.
- 3) To evaluate the use of Structure-Function Method as an Activity –based-Method of teaching Biological Sciences.

Hypothesis:

- There is no significant difference between mean values and standard deviation values with respect to pre and post test academic achievement of 8th standard students in Biological Sciences due to Structure-Function method of teaching.

Variables:

Independent variable is Structure-Function method and Dependent variable is Academic achievement.

Limitations:

1. The present study was restricted only to the secondary schools and that too only to VIIIth standard students.
2. The present study was limited only to the secondary schools of Bhatkal city
3. The problem was studied specifically to the Biological Science subject only.
4. The problem was limited only to the teaching of Biological Sciences.
5. The study was limited only to the sample collected by the Research investigator.

Methodology:

The present study involves the study of the Structure-Function Method as an Activity-based Method of teaching in Biology and the investigator has made an attempt to find out the differences in the Academic Achievement among the

students. The study was conducted on a sample of 70 students of 8th standard schools of Karwar District. Simple random sampling technique was employed.

Tools:

Achievement test on Structure-Function method in Biological sciences prepared by research investigator was used to measure the Academic achievement.

A Pre-test was conducted in the beginning by the investigator. After teaching using Specimen method, she conducted one more test called the Post -test to know the difference in academic achievement among the students.

After conducting both the tests, the research investigator compared the scores obtained by the students and analyzed the data.

Statistical Techniques used: Mean, SD, and T-test were calculated for analyzing the data.

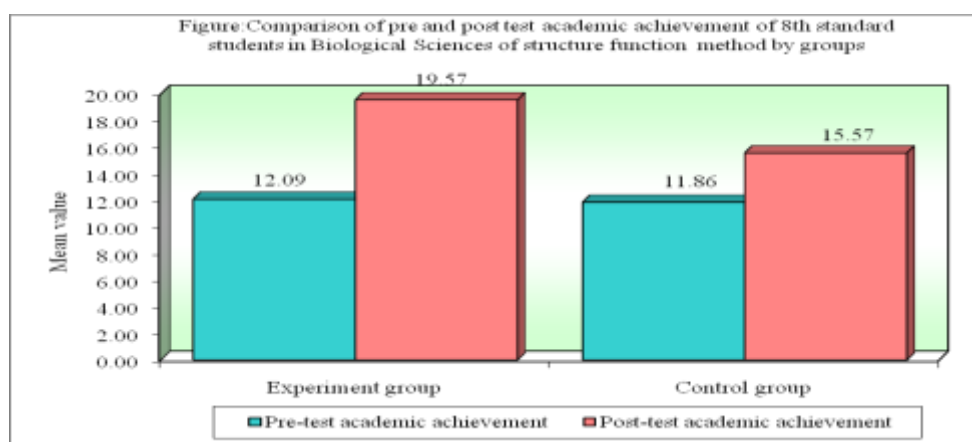
Analysis of the data:

Table showing Mean and Standard Deviation values of pre and post test academic achievement of 8th standard students in Biological Sciences due to Structure-Function Method of teaching.

Test	Summary	Experiment group	Control group	Total
Pre-test academic achievement	Mean	12.09	11.86	11.97
	SD	1.42	2.02	1.74
Post-test academic achievement	Mean	19.57	15.57	17.57
	SD	2.08	3.33	3.41
Difference from pre to post test	Mean	7.49	3.71	5.60
	SD	2.08	2.15	2.83

The results of the above table represent the Mean and Standard Deviation values of pre and post test academic achievement 8th standard students in Biological Sciences due to Structure-Function Method of teaching.

Graph showing the comparison of pre and post test scores of academic achievement of 8th standard students in Biological Sciences due to Structure Function Method of teaching.



Interpretation:

From the above table and figure, the results of pre and post test scores of academic achievement scores of 8th standard students in Biological Sciences due to structure function method of teaching are interpreted as follows:

1. The total pre test academic achievement scores of 8th standard students in Biological Sciences is 11.97 ± 1.74 , in which the pre test academic achievement scores are slightly smaller in control group (11.86 ± 2.02) as compared to experiment group (12.09 ± 1.42).
2. The total post test academic achievement scores of 8th standard students in Biological Sciences is 17.57 ± 3.41 , in which the post test academic achievement scores are smaller in control group (15.57 ± 3.33) as compared to experiment group (19.57 ± 2.08).
3. The total difference of pre and post test academic achievement scores of 8th standard students in Biological Sciences is 5.60 ± 2.83 , in which the difference of pre and post test academic achievement scores are smaller in control group (3.71 ± 2.15) as compared to experiment group (7.49 ± 2.08).

Discussion:

- It is observed from the above table and figure that the pre test academic achievement scores of 8th standard students in Biological Sciences is 11.97 ± 1.74 , in which the pre test academic achievement scores are slightly smaller in control group (11.86 ± 2.02) as compared to experiment group (12.09 ± 1.42). This means that the academic achievement scores of 8th standard students in Biological Sciences is very much higher due to experiment group when compared with control group.
- The total post test academic achievement scores of 8th standard students in Biological Sciences is 17.57 ± 3.41 , in which the post test academic achievement scores are smaller in control group (15.57 ± 3.33) as compared to experiment group (19.57 ± 2.08). This reflects

that the post test academic achievement scores of the students in Biological Sciences is very high due to experiment group when compared with control group.

- It is also reported that the total difference of pre to post test academic achievement scores of 8th standard students in Biological Sciences is 5.60 ± 2.83 , in which the difference of pre and post test academic achievement scores are smaller in control group (3.71 ± 2.15) as compared to experiment group (7.49 ± 2.08). This means that the academic achievement scores of 8th standard students in Biological Sciences is very much higher due to experiment group when compared with control group.

Major Findings of the Study:

Academic achievement scores of 8th standard students in Biological Sciences are found to be better due to Structure-Function Method as an activity based method of teaching.

Conclusion:

From the above interpretation and discussion it is concluded that the “Academic achievement scores of 8th standard students in Biological Sciences is higher due to Structure-Function Method as an activity based method of teaching”.

Therefore finally, it is concluded that the performance of the students taught by Structure-Function method is better than that of the students taught by Conventional method of teaching.

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