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A study of effect of innovative teaching in chemistry on the Scientific Aptitude and academic achievement of senior secondary level students

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Abstract

In this research paper an attempt has been made to find out the effect of innovative teaching in Chemistry on the scientific aptitude and academic achievement of senior secondary level students. In this study, research scholar used the virtual teaching method for teaching chemistry to class XI students in rural government school of Jaipur district in Rajasthan. In this study experimental method was used on a sample of 100 students comprising girls and boys from a Hindi medium government school of Jaipur district. A standardized test on scientific aptitude was used and for academic achievement unit wise pre- test and post- test were taken. For analysis and interpretation of data mean, standard deviation and t- test were used. On the basis of results research scholar concluded that the innovative teaching in chemistry (virtual teaching) is an effective teaching to increase the scientific aptitude and academic achievement of students. So this research is useful for students, teachers and society as it will help in producing confident and optimistic students with critical and analytical thinking.

Key Words- Scientific Aptitude, Academic Achievement, Innovative Teaching

Introduction

Education is a basic right of humans like fresh air and water. The objective of education is to make good citizen of world along with progress in career by getting expertise. As we all know that COVID-19 pandemic has disrupted the normal lifestyle of people across the globe, the virtual world has come to the rescue. As a result, education has changed dramatically to develop equal opportunity of learning for all through e- learning whereby teaching is undertaken on digital platforms. In such adverse situation, the virtual teaching has brought world class education under one umbrella. The most telling difference between learning in the traditional and virtual modes is the kind and extent of interaction. In the traditional classroom, the teachers employ the lecture mode as the predominant method of instruction. In the virtual classrooms, on the other hand, technology supports constructivist

approach, collaborative learning, linear or branching programming, heterogeneous groupings, power point presentation, problem solving and high order thinking skills etc. educational processes that a lecture format cannot facilitate. So the research scholar studied the effect of innovative teaching (virtual teaching) in chemistry on the scientific aptitude and academic achievement of senior secondary level students.

Objectives

1. To determine the impact of innovative teaching in chemistry on the scientific aptitude of senior secondary level students.
2. To determine the impact of innovative teaching in chemistry on the academic achievement of senior secondary level students.

Hypothesis

1. There does not exist any significant difference between traditional and innovative teaching in chemistry on scientific aptitude of senior secondary level students.
2. There does not exist any significant difference between traditional and innovative teaching in chemistry on academic achievement of senior secondary level students.

Research Methodology

In this study experimental method was used.

Sample

100 students were selected from rural government school of Jaipur district in Rajasthan.

Tools

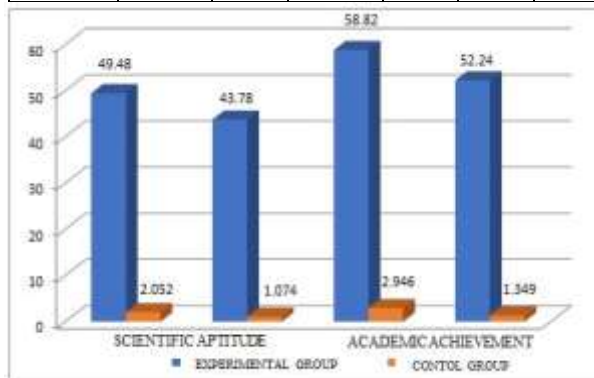
Standardized test on scientific aptitude and teacher-made pre- test and post- test on each unit for academic achievement of students were used.

Statistical Techniques

Mean, Standard deviation and t- test.

Analysis of Data

Group	Variable	Number of Students	Mean	S.D.	t-value	Significance
Experimental Group	Scientific Aptitude	50	49.48	2.052	17.43	Rejected
Control Group		50	43.78	1.074		
Experimental Group	Academic Achievement	50	58.82	2.946	14.36	Rejected
Control Group		50	52.24	1.349		



Rejection of Null Hypothesis indicated that there exist significant differences between traditional and innovative teaching in Chemistry on scientific aptitude and academic achievement of senior secondary level students.

Conclusion

When the students of experimental group were taught chemistry by the innovative teaching i.e. virtual teachings then their logical and analytical thinking has developed related to the concepts of chemistry which increased their scientific aptitude and hence, their academic achievement has also increased.

Delimitations

1. The study is limited to the sample of 100 students.
2. The study is confined only to the students of class XI
3. The study is limited to only one rural government school.

Suggestions

1. Similar study can be conducted in any other subject than chemistry.
2. Similar study can be conducted at students of other levels.
3. Similar study can be conducted in private schools.

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