AN EXPERIMENTAL STUDY OF THE EFFECTIVENESS OF THE WEBSITE IN LEARNING SCIENCE AND TECHNOLOGY AT SECONDARY LEVEL

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ABSTRACT

Investigator observed during her teaching experiences at B. Ed. College that, B. Ed. Trainees use only Chalk and Talk method or charts, pictures and models while teaching in the classes. But at the same time, the students feel such teaching boring as well as uninterested. With a view to find the answers of such questions like “What is the effect of teaching by using a website?” “Whether website in Gujarati Language is more effective and helpful in teaching Science and Technology”, the investigator thought to conduct an experimental study to know the effectiveness of website in teaching of Science and Technology subject. Main aim of the present research was to construct and try out a website in Gujarati medium to teach Science and Technology subject to the students of standard- IX by using website. The Experimental Research Method was used in the present study. Investigator selected total 384 students from three Secondary Schools to conduct the experiment. As the tools for research, Criterion tests and questionnaires were used to collect data. A website was constructed for teaching of three selected topics of standard- IX in Science and Technology subject. Data analyses were made by computing ANOVA, ANCOVA, Percentage and Contingency Chi-square.

Key words : science and technology, criterion tests, experimental research etc.
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❖ Introduction

Many projects are being undertaken by the Government on computer based education at school level. So many researches have been conducted on the subject of computer based education. As a result of these efforts, fast and better reforms are being seen in the field of education and they are found to be helpful for qualitative education. But there is rarely any scope of interaction in computer based teaching-learning. To remove this limitation, some software is available in which fixed questions-answers are preloaded. Such software is not able to provide required guidance according to the need and time of the students. To reduce this limitation, investigator had thought to present concept of e-learning by preparing a website so that online interaction for students can be possible.

❖ Objectives of the Research

Following were the objectives of the present study:

1. To construct a website in Gujarati medium to teach Science and Technology subject for the students of standard-IX.
2. To try out the website in Gujarati medium to teach Science and Technology subject on the students of standard-IX.

3. To examine the effectiveness of the website in Gujarati medium for teaching of Science and Technology subject on the students of standard-IX.

4. To examine the effectiveness of teaching method on teaching of topic “THE FUNDAMENTAL UNIT OF LIFE-CELL” from Science and Technology subject of Standard-IX.

5. To examine the effectiveness of teaching method on teaching of topic “PLANT TISSUES” from Science and Technology subject of Standard-IX.

6. To examine the effectiveness of teaching method on teaching of topic “ANIMAL TISSUES” from Science and Technology subject of Standard-IX.

7. To examine the effectiveness of teaching method on teaching of all three selected topics of Science and Technology subject of Standard-IX.

❖ Hypotheses of the Research

1. There is no significant difference between the effectiveness of teaching methods on the teaching of topic “THE FUNDAMENTAL UNIT OF LIFE-CELL” from Science and Technology subject of Standard-IX.

2. There is no significant difference between the effectiveness of teaching methods on the teaching of topic “PLANT TISSUES” from Science and Technology subject of Standard-IX.

3. There is no significant difference between the effectiveness of teaching methods on the teaching of topic “ANIMAL TISSUES” of Science and Technology subject of Standard-IX.

4. There is no significant difference between the effectiveness of teaching methods on the teaching of all the three selected topics from Science and Technology subject of Standard-IX.
❖ **Research Methodology**

Keeping in view objectives of the present study, the Experimental Research Method was used. This research was undertaken according to ‘**Multiple Group-pre test-post test**’ design, in which Experimental Group - I was that of self-study by using the website, Experimental Group – II was that of the study by using the website with the help of a teacher, where as Control Group was taught by traditional teaching method.

❖ **Population and Sampling**

All the students studying in Standard-IX in Gujarati medium Secondary Schools run by Secondary Education Board, Gujarat State formed the population for the present study.

For sample, Five schools of Surat District having computer and internet facility were selected by using purposive sampling method. For pre - piloting, individual try out was made on six students of a school and group try - out was conducted on 36 students. Field experiment was executed on 384 students selected from the three Secondary Schools. Three equal groups were made in each school based on their achievement level and gender by using Stratified Random Sampling method.

❖ **Research Tools**

In the present study, a website was constructed to learn selected topics of Biology from Science and Technology subject of Standard-IX. For data collection one main criterion test of all the three units together and individual criterion test for each topic were constructed. For having the responses of the students towards the experiment, questionnaires were developed.

❖ **Data Analyses Techniques**

ANOVA, ANCOVA, Percentage and Contigenas Chi-square were computed for statistical analyses of the data.

❖ **Major Findings**

1. For the topic **“THE FUNDAMENTAL UNIT OF LIFE-CELL”** it was concluded that, learning through website and learning through website with the help of a teacher, were
equally effective. In the same way, equal effectiveness was found between the groups taught by traditional teaching method and group learning through website with the help of a teacher, but higher effectiveness was found in group learning through website than the group taught by traditional teaching method.

2. For the topic “PLANT TISSUES” it was concluded that, learning through website and learning through website with the help of a teacher, were equally effective. But higher effectiveness was found in group learning through website and group learning through website with the help of a teacher than the group taught by traditional teaching method.

3. For the topic “ANIMAL TISSUES” it was concluded that, learning through website and learning through website with the help of a teacher, were equally effective. But higher effectiveness was found in group learning through website and group learning through website with the help of a teacher than the group taught by traditional teaching method.

4. For all the three topics, it was concluded that, learning through website and learning through website with the help of a teacher, were equally effective. But higher effectiveness was found in group learning through website and group learning through website with the help of a teacher than the group taught by traditional teaching method.

BIBLIOGRAPHY


