



EFFECTIVENESS OF E-CONTENT APPROACH ON ACHIEVEMENT IN SCIENCE AMONG IX STANDARD STUDENTS

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ABSTRACT

The wide spread use of ICT impacting on global societies and on educational system. This creates new requirements for teachers to use computer based applications in educational practices and it can help to reach the unreachable. One of the methods such as e-content approach has emerged as an effective approach in learning. Therefore in order to find out the effectiveness of e-content approach on achievement in science, the investigator has made an attempt to do this study. In this study pre-test, post-test parallel design was employed. The experimental group was exposed to e-content approach whereas the control group was taught by traditional method. The 't' test was calculated to find out the significance of the variable. The study revealed that the e-content approach is more effective than the traditional method in learning science at secondary level.

KEYWORDS: global societies , educational system , traditional method , truth of nature.

INTRODUCTION:

Science is the attempt to learn the truth about the truth of nature, about parts that are deplorable. Science is both a body of knowledge and the process of acquiring and refining knowledge. The newer concepts of physics, chemistry, biology and the experimental approach to the learning of science should be stressed. Indian Education Commission (1964-66) has pointed out that the methods of teaching science should be modernized, stressing the investigatory approach and the understanding of the basic principles. The teacher has to find a new way or methodology to teach science. An innovative application of computer in the teaching and learning process is e-content. This may be intranet based which includes text, video, audio, animation and graphics. e-content is the form of multimedia with the use of the computer to present and combine text, graphics, audio and video with links and tools that let the user navigate, interact, create and communicate (Fred T. Hostetter 2001). E-content, today is mostly viewed as a way to preserve and carry forward cultural or historical heritage, to disseminate lifestyle, scientific, educational and business information in some digitalized format, or to provide some interactive service to users.

PURPOSE OF THE STUDY

The traditional lecture method makes less effective for the learning of the students. New technologies are coming in the field of education which promises to change the process of teaching and learning. The e-content have become more effective in the class room teaching to engage the students throughout the period and make the learning easy. The use of such technology in the subject of physics will motivate the teaching community and create better learning conditions. In this study the investigator is comparing the traditional lecture method with e-content method.

OBJECTIVES OF THE STUDY

1. To develop and validate an e-content package in science.
2. To study the effectiveness of e-content in science of IX standard students.
3. To compare the effectiveness of e-content in teaching over traditional lecture method of science to IX standard students.
4. To Study the significance differences in the pre and post test achievement in the science among the comparable groups of IX standard students who have been taught by e-content and traditional lecture method

VARIABLES OF THE STUDY

The present experimental study involved two independent variables as that of two different teaching methods of imparting science to IX standard students and their achievement in pre and post test on science subject were considered as dependent variables.

HYPOTHESES OF THE STUDY

The following hypotheses were formulated based on the objectives of the study.

1. There is no significant difference in the mean achievement scores of control group and experimental groups in pre-test.
2. There is no significant difference in the mean achievement scores of control group and experimental group in post-test.
3. There is no significant difference between pre and post test mean achievement scores of control group.
4. There is no significant difference between the pre and post test mean achievement scores of experimental group.

RESEARCH DESIGN OF THE STUDY

The present study used pre test- post test –two group experimental design. The experimental group was exposed to e-content approach whereas the control group was taught by traditional method. And the measures were taken to control or minimize the threats to internal and external validity to a reasonable degree.

SAMPLE

The investigators have chosen the standard IX students of Government higher secondary school, sengulam, functioning in Karur district as simple random sampling technique The investigator chosen 60 students. Among the 60 students, 30 students are treated as experimental group and the other 30 students formed as control group.

RESEARCH TOOLS

Achievement test was developed and standardized by the investigator. The tool consists of 40 multiple choice test items.

PRODUCTION OF E-CONTENT

The content for the present e-content on topic “ Heat” in physics of IX standard science subject have been taken from the prescribed syllabus for the ninth standard students from science text book by Tamil Nadu State Board of secondary Education. Then preparation of scripts for video and the content was written with necessary headings and captions. After the scripts were written, the contents of the selected topics were transferred into the form of visuals. The experts comments and suggestions were obtained and certain changes were made on the basis of the comments of the experts.

ADMINISTRATION OF THE ACHIEVEMENT TEST AND DATA COLLECTION

The achievement test was conducted in two forms as pre-test and post-test for both control group and experimental group. The achievement test constructed for collecting data was administered as pre-test for the learners of both control group and experimental groups to assess their entry level of behaviour. After treatment, post-test was administered to both the control group and experimental groups. The purpose of the post-test was to find out the terminal behaviour. The scores of pre-test and post-test of the students were collected as data for analysis of the study.

Table 1
Computation of 't' value between the achievement mean scores of the control group and the experimental group in Pre test

Group	N	Mean	SD	't'	Sig.
Control group	30	28.00	1.58	0.57	Not Sig
Experimental group	30	27.76	1.62		

From the Table 1, the obtained 't' value (0.57) is less than the critical value at level of significance (0.05 level) and hence, the null hypothesis that there is no significant difference in the mean achievement scores of control group and experimental groups in pre-test is not rejected. And it is interpreted here that both the groups performed equally in the pre test.

Table 2
Computation of 't' value between the achievement mean scores of the control group and the experimental group in Post test

Group	N	Mean	SD	't'	Sig.
Control group	30	37.17	2.36	16.77	Sig.
Experimental group	30	53.03	4.61		

From the Table 2, it is observed that the obtained 't' value (16.77) is more than the critical value at level of significance (0.05 level). Hence, the null hypothesis that there is no significant difference in the mean achievement scores of control group and experimental group in post-test is rejected, further, it is interpreted here that the experimental group performed better than the control group in the post test.

Table 3
Computation of 't' value between the achievement mean scores of pre and post tests of control group

Tests	N	Mean	SD	't'	Sig.
Pre-test	30	28.01	1.58	16.33	Sig
Post-test	30	37.17	2.36		

From the Table 3, the obtained 't' value (16.33) is more than the critical value at level of significance (0.05) and hence, the null hypothesis that There is no significant difference between pre and post test mean achievement scores of control group is rejected. And it is interpreted here that the control group who underwent subject units in traditional lecture method performed more in the overall post test than in the overall pretests.

Table 4
Computation of 't' value between the achievement mean scores of pre and post tests of experimental group

Tests	N	Mean	SD	't'	Sig.
Pre-test	30	27.75	1.61	25.53	Sig
Post-Test	30	53.03	4.62		

From the Table 4, the obtained 't' value (25.53) is more than the critical value at level of significance (0.05) and hence, the null hypothesis that there is no significant difference between the pre and post test mean achievement scores of experimental group is rejected. Further it is interpreted here that the experimental group who were exposed to e-contents method performed better in the post-test than in the pre test.

MAJOR FINDINGS OF THE STUDY

1. e-content approach in physics at high school level is more effective when compared with the traditional method of teaching.
2. There is a significant difference between pre test and post test mean achievement scores of the control group students.
3. There is a significant difference between pre test and post test mean achievement scores of the experimental group students.
4. There is no significant difference between control group and experimental group students in their pre-test mean achievement scores.
5. There is a significant difference between control group and experimental group students in their pre-test mean achievement scores

IMPLICATIONS OF THE STUDY

1. The research findings proved that Zoology can be taught effectively and interestingly through e-content approach.
2. E-content approaches must be included in the planning of curriculum preparation.
3. The pre-service and in-service teacher training programmes have to be organized to develop the skill of using modern technology in classroom teaching.
4. The teacher should make use of appropriate teaching aids because visual representations will maintain the liveliness of the learning activity besides offering an experience to students

CONCLUSION

The main purpose of the study is to develop the scientific attitude towards the students and to make teaching and learning of science for a purposeful and meaningful activity. This approach more helps to students for better understanding the abstract area in science subjects. It is essential that teachers also equip and prepare themselves for improving their technological skills to facilitate learning in the classroom and prepare students for effective learning.

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