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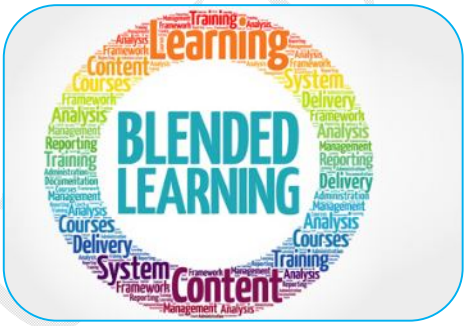
BLENDED LEARNING APPROACH IN ENHANCING SCIENCE ACHIEVEMENT AMONG SECONDARY GRADE STUDENTS

Dr. I. Tharvin Sumi
Assistant Professor

ABSTRACT:

The study developed Blended Learning Approachin enhancing science achievement among secondary grade students. Parallel group experiment design was adopted as the method ofstudy. A sample of 30 IX standard students (15 in control group and 15 in experimentalgroup), were selected for the present study. The experimental group was subjected toblended learning approach of teaching (Traditional and online learning), while the control group was subjected to traditional method.



KEYWORDS: *Blended Learning Approach*

INTRODUCTION:

The Teaching and Learning environment is embracing a number of innovations and some of these involve the use of technology through blended learning. This innovative pedagogical approach has been embraced rapidly throughout.Blended learning emerged as one of the most popular pedagogical concepts at the beginning of 2000.Blended learning is the integration of digital tools, techniques and materials with the physical classroom.

Science is the knowledge gained through the collection of experimental data, observations and deductions to produce an explanation of natural phenomena that can be trusted.

NEED FOR THE STUDY:

Concerns over Science Education continues to grow due to the increasing global demands and competitiveness for careers in science.Science inquiry and scientific literacy is needed for almost everyone. People are needed to use scientific information to make choices and more and more jobs are requiring people to be able to learn, reason, think creatively, make decisions, and solve problems.

The purpose of learning is to improve and develop the quality of learning. In order to develop the quality of learning, one should select, establish and develop an optimum learning method to achieve desired outcome. Blended Learning is a mixture of learning methods that incorporate multiple teaching modals. This approach also helps cater to the individual needs of the learner, most students have unique learning styles and a blended approach is more likely to cater to those needs than a traditional classroom teaching experience. Hence blended learning approach can be utilised to gain science knowledge.

OBJECTIVES

1. To compare the mean scores of the students in experimental group (taught by Blended LearningApproach) and controlled group (taught by traditional approach) in pre-test.

2. To compare the academic achievement of the students in science experimental group (taught by Blended Learning Approach) and controlled group (taught by traditional approach).

HYPOTHESES

1. There will be no significant difference in the mean scores of the Experimental and Control groups at the pretesting condition.
2. There will be no significant difference in the mean scores of the Experimental and Control groups at the post testing condition.

METHOD OF STUDY

Parallel group experimental design was used as the method of study. Purposive sampling technique was used to select the sample of the study. The sample was selected based on the Ist mid-term marks in science. Thirty students of average mark scores (50-55%) were pooled and equalled into two groups. The control group (15 students) and the treatment group (15 students) were equated with equal level of students with respect to their academic achievement scores. The experimental group was taught the concept through blended learning approach. The control group was taught through traditional method.

The treatment lasted for a period of ten daysThe online component consists of interactive multimedia learning modules which provided students with relevant knowledge towards the topic light, blogs for students to document their work was created. In the classroom the teacher would have discussions with the class on the topic, students would have group discussions and consultation sessions with the teacher.

RESEARCH TOOLS

A Self-made achievement test on science in one unit(Light) was administered to all the students in the sample. The test was conducted on two occasions as a pre-test and as a post-test. The purpose of the pre-test was to examine the student's prior knowledge and post-test was to analyse the academic performance after lessons are taught through blended learning and traditional approach. The tool consists of 50 test items sales. Each test items have 4 multiple choices, of which, one is the correct answer and three are distracters.

SCORING PROCEDURE

The scoring procedure was simple. For each right answer, one mark was awarded and no mark was given for the wrong response. The aggregate score of an individual reflect his/her knowledge regarding light.

RELIABILITY

A Pilot study was conducted with 25 IX standard students and the reliability of the tool was calculated using test re-test method. The reliability co- efficient of the tool was found to be 0.81.

DELIMITATIONS

1. IX standard students of Blue Star School alone constituted the sample of the study
2. The sample was drawn using purposive sampling technique.
3. "Light "is the content selected for the present study
4. Blended learning approach was used.

STATISTICAL TECHNIQUES

To analyse and interpret the data both descriptive and inferential statistical techniques were used. The data collected was analysed and interpreted using mean, standard deviation and t-test.

Test	Group	N	Mean	SD	Mean Difference	't' value	Level of Significance (0.05)
Pre-test	Control Group	15	25.47	4.19	0.533	0.597	N.S
	Experimental Group	15	24.93	4.28			

Test	Group	N	Mean	SD	Mean Difference	't' value	Level of Significance (0.05)
Post-test	Control Group	15	26.07	3.56	11.53	12.397	S
	Experimental Group	15	36.70	3.92			

FINDINGS:

There is a significant difference in the mean scores of the Experimental and Control groups at the post testing condition. Mean score of experimental group is found to be high which proves Blended learning approach in teaching science is effective.

EDUCATIONAL IMPLICATIONS

1.In this study blended learning approach was carried out at the rate of 50%-50% (50% face to face, 50% online). Various blended learning approach can be conducted as mixed ratios. Furthermore, theycan be benefitted from diversified strategies and methods such as collaboration methods, project based learning etc.

2.The studies held on future can be carried out using enriched web materials which would be produced by professional content developer team.

3. This study has offered a blended learning approachfor teaching science by using traditional learning environment and online learning environment together. Blended learning approach can be carried out for other subjects also.

CONCLUSION

In conclusion, this study has found that students' science achievementwas enhanced when the learning environment was one that was supported by face to face as well as online learning environments. This provides positive support to the use of blended learning environments towards achievement enhancement.

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