



Impact of blended learning in science learning

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Abstract- Blended learning or hybrid learning is a type of instructional environment for online students that combines what is called synchronous and asynchronous learning. Blended learning allows students to practice all reading, writing, listening, and speaking.

The study highlights the effectiveness of blended learning in learning science among the 10th standard students. Objectives of the study is to find out the significant difference in in achievement means score pre-test of control group and post-test of control group of school and find out the significant difference in acumen means score of schools to find out the effectiveness of blended learning in learning science methodology equivalent group experimental method was adopted in the study 120 students of 10th standard from four type of the school Jabalpur were selected as a sample for the study finding is blended learning is more effective than traditional learning methods for science learning for the 10th standard students educational implementation it can be implemented in other class and subjects also .

Keywords- Blended learning, Achievements, Traditional learning, science.

Introduction- Blended learning, helps to develop new knowledge and skills that can be transformed to the working environment. The use of blended learning is expanding globally (vaughn2007) blended learning is evident in professional development training programs and General classroom offerings for a number of educational programs across disciplines in global communities. The teaching landscape is changing rapidly the technological Rise of the 21 century and the widespread integration of digital technology into our learning ecosystem combined with access to the internet has integrally Changed teaching in just a few years .blending learning has completely transform how knowledge was imparted to the children earlier Unlike the traditional way of teaching by chalk and board technique blended learning makes learning simple easier and effective. With changes in learning technology and trend towards informal learning, this type of learning continues to offer many benefits: standardization, self- paced and any time anywhere learning. Blended learning is crucial because it break down the traditional walls of teaching now ,with access to modern day Technologies, we can tailor the learning experience for every child this approach ensure that the child is engaged and driving their individual learning iit also caters to the need of child with unique learning styles that provide splendid learning experiences .

Blended learning practices are used by students leaders faculty members and staff in various teaching and learning venues the leadership development training process continue after face to face activity participation with the support of blended learning Technology many leadership University and college program using blended learning include at least three dimensions for students as a Awareness of concepts definition and procedures \Policy understand of

measurable skills and knowledge the role of Technology today using blended learning has broad implications for the students for learner the online tools available in blended courses can also significantly enhance students' engagements ensuring that all students and learners participate in course discussions.

Statement of the problem

Students of 10th standard had hurdles in learning science. By adopting traditional methods in the classroom teaching, students scored less marks in science. Hence the researcher tried to eliminate the problems by selecting the study entitled effectiveness of blended learning in Learning Science 10th standard.

Need and significance of the study

Learning science is difficult to the tenth standard students, scoring more marks in the science is necessary for the acquiring the best result. Science learning is not fruitful by adopting traditional methods. Science learning only through experience or appropriate method is needed for science learning. Stop teachers different method for science teaching in the classroom of science. All the effort carried by the teacher for eliminating the problem of science learning was mere attempt and fail to create effective atmosphere for scoring high marks in science. Hence the researcher took effort by executing blended learning for science learning.

Review of literature

Chang,chi- cheng et al.(2014)Examine the effect of blended e learning on electric machinery performance(achievement test and self-assessment). Participants were two classes of 11th graders majoring in electrical engineering and taking the electrical machinery class at vocational High School in Taiwan. The participants were randomly selected and assigned to either the experimental group (n=33) which studied blended e learning for the control group (n =32) which studied through traditional classroom learning. The experiment lasted for 5 the results showed that (a) There were no significant difference in achievement test scores between blended e learning and traditional learning(b) student in the experimental group obtained significantly higher score or self-assessment than student in the control group(c) student score on self-assessment was significantly higher after studying through blended learning than before overall blended learning did not significantly affect student achievement test score but significantly affected their self-assessment scores.

2 -Dr PS Chitra and doctor singaravelu (2019) Examine the effectiveness of blended learning in learning chemistry among the student of 9th standard 120 students from 4 type of school in Coimbatore. Where are selected as the sample for the study and finding the blended learning is more effective than traditional method in learning chemistry for the learner at standard 9th.

Objective of the study

1. To diagnose the problem of the learner in Science learning through traditional methods.
- 2- To find out whether there is any significant difference in achievement mean score of the students between the pretest of control group and the post test of control group with respect to government and private school
- 3- To find out whether there is any significant difference in achievement mean score of the students between the pre -test of experimental group and posttest of experimental group with respect to government and private school
- 4- To find out the impact of blended learning method in science learning.

Hypothesis of the study

- 1- There is no significant difference in achieved mean score of the students between pretest of control group and the post test of control group with respect to the government and private school.

2- There is no significant difference in achievement mean score of the students between pre- test of experimental group and the posttest of experimental group with respect Government and private school

3-Blended learning method is more effective than traditional method in Science learning.

Variables

The independent variable blended learning and the dependent variable achievement score where used in the study

Delimitation of the study

The responsibility of the researcher is to see the study is conducted with the maximum order to be reliable researcher can find 120 student of 10th standard in in government and private schools Jabalpur Madhya Pradesh

Methodology-Equivalent crops experimental method was adopted for the study 120 students of 10th standard Jabalpur Madhya Pradesh sample selected by researcher 60 students you are considered as a control group and another 30 pair considered as an experimental group researchers Raina Tiwari mad achievement test was used as a tool for the study.

CONSTRUCTION OF TOOLS

The researches self-made achievement test was used for the pre-test and post-test both control group and experimental groups the same question was used for the both pre and post-test to evaluate the students' knowledge in science through objective type of question which carried one mark for each question and contain 25 marks.

Pilot study

In order to ascertain the feasibility of the proposed Research and also the adequacy of the propose tools for the study a pilot study had been undertaken during the pilot study the problem under start had been finally tuned. Sufficient number of model question paper where prepared and distributed the 10 student of standard 10th in 4 type of schools, Jabalpur for the pilot study. This exercise was repeated twice over two sets of 10 students each.. The classification raised by the students was clear then and there and the field answer script were collected by the researcher. These students were selected in such a way that they are not part of either the control group or experimental group.

Reliability of the tools

A test is reliable if it can be repeated with the similar data set and its or similar outcome the expectation of a good research is that it would be reliable. It refers to be trustworthiness of measurement of tools whatever it Measures. Under this study, the reality had been computes using test-retest method and the calculated value comes to 0.77 the value is quite significant and implies that the tools adopted reliable. Is there liability was established for the study.

Validity of the tools

The concept of validity is fundamental to research result. Result is internally valid if an appropriate methodology has been following in order to yield that result. A test is said to be valid if it measures what it intends to measure. The expert opinion of the court staff was obtained before freezing the design of the tool. Subject expert and experienced teacher were requested to analyze the tool. Their opinions indicated that the tools and content validity.

Procedure of the study

The following activities are designed

- Designing the blended learning
- Online learning
- Mixed methods

Planning of blended learning

- Planning of blended learning
- Select activities
- Discuss and review

Data collection

The researcher administered pretest to the student with the help of subject teachers the question paper and responses were given to the students and collected and evaluated learning obstacles of the learners where identify by the pretest the causes of low achievement by a suitable method where found out. Blended learning method was used in the classroom for science learning for one week the post test was administered and the effectiveness of blended learning was found.

Hypothesis testing

Hypothesis 1

There is no significant difference in Achievement mean score of the students between the pre-test of control group and post-test of control group with respect state Government, central government and private school

Table Number 1

Mean score of the student between the test of control group and the post test of control group with respect to government and private school

S.no	Schools	N	Mean	S.D.	't' value	Level of significant at 0.05 level	
1.1	State Government	30	19.66	3.09	0.194	NS	
		30	19.99	3.024			
1.2	Centre Government	30	26.69	4.71	0.130	NS	
		30	29.13	3.29			
1.3	Private school	30	11.20	2.82	0.43	NS	
		30	11.30	2.58			

The calculated t value for 1.1, 1.2 and 1.3 are 0.194, 0.130, and 0.43 respectively is less than the table value 2.04 at 0.05 level. Hence the null hypothesis accepted. There is no significance difference in Achievement mean score of the students between the pretest of the Control group and the post test of the control group with respect to state government, central government and private schools.

Hypotheses 2

There is no significant difference in achievement many score of the students between the pre-test of experimental group and the post test of the experimental group with respect to State Government, Central Government and private school.

Table 2: Mini score of the students between the pre- test of experimental group and the post test of experimental group with respect to state government Central Government and private school.

S.no.	Dimension		N	Mean	S.D.	"t" value	Level of significant at 0.5 level
2.1	State Government	Pre- test experimental group	30	16.80	6.06	13.48	S
		Post -test experimental group		30.80	4.87		
2.2	Central government	Pre- test experimental group		11.63	2.85	38.84	S
		Post test experimental group		44.20	3.11		
2.3	Private	Pre- test experimental group		11.27	1.78	25.66	S
		Post -test experimental group		29.27	4.35		

The calculated t value for 2.1, 2.2 and 2.3 are 13.48, 38.84 and 25.66 respectively is higher than the table value 2.04 at 0.05 level. Hence, the null hypothesis is rejected there is a significant difference in achievement mean score of the students between the pretest of experimental group and post-test of experimental group with respect to state government, Central Government and private school.

Hypothesis -3

Blended learning method is more effective conventional method of science learning.

Table-3

Main score difference between control group and experimental group.

Dimension	Groups	Mean	Mean difference
State government	Pre- test experimental group	18. 40	13.40
	Post- test experimental group	31. 80	
Central government	Pre- test experimental group	12.6 3	30.57
	Post-test experimental group	43.20	
Private	Pre- test experimental group	12.27	18.00
	Post-test experimental group	30.27	

Achievement mean score of the learner is pre-test of control group in three type of a school are respectively 18.40, 12.63, and 12.27. Greater than the achievement mean score of the learner post-test of experimental group in three type of school are respectively 31.80, 43.20 and 30.27. It's so that science learning by using blended learning is more effective than conventional method in three type of school.

Findings

1. There is no significant difference in achievement mean score of the students between the pre-test of control group and the post test of control group with respect to 2 state government central government and private school.
2. There is a significant difference in achievement mean score of the students between the pre-test of experimental group and post- test of experimental group with respect to state government, Central Government and private school.
3. Achievement mean score of the learner in pre-test of control group in three type of schools are respectively 18.40, 12.63 and 12.27. Greater than the achievement mean score of the learner post -test of experimental group in three type of school are respectively 31.80, 43.20 and 30.27. It's so that learning science by using blended learning is more effective than conventional method in three type of school.

Educational implications

1. Blended learning can be used for learning of different subject and it can be use primary Secondary and Higher level.
2. Blended learning can be encourage to implement to use in lifelong education.
3. It can be implemented in teacher education.
4. It is more supportive to promote Sarva Shiksha Abhiyan.
5. It is very useful for slow learner.

Conclusion

The study revise that 10th standard students of three type of school Jabalpur had problems in Science learning conventional method. Science learning through blended learning is more effective than traditional or conventional method hence it will be more supportive and useful for enrich the science learning of 10th standard.

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