

## EFFECTS OF BLENDED LEARNING INSTRUCTIONAL STRATEGY ON SOCIAL SCIENCE ACHIEVEMENT OF SENIOR SECONDARY STUDENTS

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### ABSTRACT

Information and technology has now become the key to academic success of students at various levels of education. Blended Learning strategy is viewed as resourceful and innovative instructional strategy which can elegantly integrate traditional instructional convention method and e-learning method. The purpose of the research work was to study the effectiveness of blended learning instructional strategy on social science achievement of Class-XI students and to observe the difference between the students taught by blended learning strategy and face-to-face traditional instructional strategy. Experimental method was adopted for the present study. The researcher has employed the tools, viz. achievement test in economics and blended learning instructional package for this experimental study. The findings of the study reveal that the blended learning strategy is more effective than the face-to-face traditional instructional method for the academic achievement. The study found that blended learning strategy has improved the academic achievement of students in posttest.

**Key words:** *Blended Learning Instructional strategy, Traditional Instructional Method, Social Science Achievement*

### INTRODUCTION

Technology has influenced tremendously in all domains of human life. The impact of information and communication technology is prominently visible in the field of education. In recent years it has been marked a rapid growth and expansion of the internet usage and use of digital technologies. It is the information and technology which has now become the key to academic success of students at various levels of education. In traditional instructional strategy, the application of technology and effective learning involvement is not viable and in online-

learning the occupancy of teacher in face to face mode is missing. Hence, in both traditional instructional method and e-learning methods have become the part of imperfections and to get over these limitations there is the need to pursue a new method of instruction which can combine both technology and traditional instructional method. So Blended Learning strategy is viewed as resourceful and innovative instructional strategy which can elegantly integrate traditional instructional convention method and e-learning method. Blended learning strategy is considered as “the integrated combination of traditional learning with web based online approaches, the combination of media and tools employed in an e-learning environment and the combination of a number of pedagogic approaches irrespective of learning technology used” (**Whitelock and Jeffs, 2003**).

The study conducted by **Alseweed (2013)** on the effects of the traditional learning, blended learning on university students achievement revealed a significant difference in the achievement test scores in favor of blended/hybrid learning. Blended teaching strategy had a statistically significant contribution on the achievement of the students in geography compared to the face-to-face expository method (**Dikmenli and Unaldi , 2013**). The study of **Lacatan (2013)** reveals that students performed well in the blended/hybrid strategy method as compared to traditional face-to-face method. **Wichadee(2014)**, found a positive relationship between academic achievement and blended learning strategy. Blended instructional strategy leads to high achievement in geography than conventional method (**Akgunduz & Akinoglu, 2016**).

## **OBJECTIVES**

1. To construct and administer an achievement test on social science for class-XI students of experimental and control group.
2. To design and develop blended learning instructional package of social science for class-XI students of experimental group.
3. To study the effectiveness of blended learning instructional strategy on social science achievement of Class-XI students.
4. To study the difference between the students taught by blended learning strategy and face-to-face traditional instructional strategy.

## HYPOTHESIS

1. There is a significant difference between the pretest and posttest scores of the students taught by blended learning instructional strategy.
2. There is a significant mean difference between the pretest and posttest scores of the students taught by face-to-face traditional instructional strategy.
3. There is a significant difference between the pretest and posttest scores of students taught by blended learning strategy and face-to-face traditional instructional strategy.

## DELIMITATION OF THE STUDY

1. The present study was delimited to the Senior Secondary level students of A.B. Junior College, Basudevpur of Bhadrak district in Odisha only.
2. Students of Odisha CHSE were considered for the present study.
3. The study was confined to Class-XI standard students of Bhadrak district during 2018-19 academic session.
4. The study was confined to only economics subject.

## RESEARCH METHOD

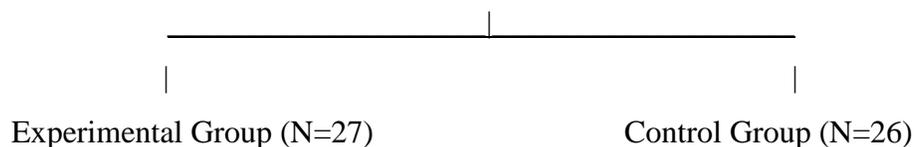
Experimental method was adopted for the present study.

## POPULATION AND SAMPLE

Population of the study is the students of Class-XI of AB Junior College, Basudevpur of Bhadrak district in Odisha. A sample of 53 students belongs to Economics subject of class- XI was randomly selected from AB Junior College, Basudevpur. The schematic layout of sample distribution is given below.

### LAYOUT OF SAMPLE

Total No. of Sample (53)



## TOOLS USED IN THE STUDY

The researcher has employed the following tools for the purpose of data collection.

- (i) Achievement Test in Economics (Teacher Made Test)  
- Developed by the investigator
- (ii) Blended Learning Instructional Package  
- Developed by the investigator

All the tools were developed and validated by the investigator with the guidance and supervision of experts.

### **1. Blended Learning Instructional Package**

Blended Learning Instructional Package was developed by the investigator to conduct the experiment. By blending both online and face-to-face traditional instructional strategy, Blended learning Instructional package for the subject Economics was developed. For the development of Blended Learning Instructional package, the steps i.e., planning, Designing and validation were followed.

### **2. Academic Achievement Test for the Social Science Subject (Economics)**

The achievement test for the subject Economics was developed by the investigator with the guidance and supervision of experts. The achievement test was developed by following the principles of test construction i.e., preparing blue print by giving weightage to different objectives, item analysis, determining the item difficulties value and discriminating power of each item. The draft consisting of 76 statements/items was finalized for the scale.

### **STATISTICAL TECHNIQUES USED**

The obtained scores were processed and converted into the mean gain scores. To analyse the data both descriptive and inferential techniques were used. 't' test was used to determine the significance difference between the scores of control group and experimental group.

### **ANALYSIS AND INTERPRETATION OF DATA**

The study was mainly aimed at developing a Blended Learning Instructional Package for economics among senior secondary students of experimental group. It also aimed at finding out the effectiveness of Blended Learning strategy on academic achievement.

The data obtained from the experimental study has been analyzed involving quantitative techniques which deals with the analysis of pretest and posttests of the dependent variables and their interpretations. Both descriptive and inferential techniques were used in the data analysis.

## DISTRIBUTION OF EXPERIMENTAL AND CONTROL GROUP STUDENTS BASED ON THE VARIABLE ACADEMIC ACHIEVEMENT

The distribution of students appeared for both pretest and posttest for the dependent variable, i.e- Academic Achievement is given in table-1.

**Table-1**

**Distribution of students participated in both pretest and posttest for Academic Achievement**

Variable	Group	Number of Students Participated for both Pre test and Post test
Academic Achievement	Experimental Group	27
	Control Group	26

The table-1 shows that the experimental group comprise 27 students participated both pretest and posttest of academic achievement and in control group 26 students participated both pretest and posttest of academic achievement.

## DESCRIPTIVE ANALYSIS OF THE VARIABLE ACADEMIC ACHIEVEMENT

For the achievement of economics of experimental group and control group for pretest and posttest, descriptive statistics was carried out. The mean, median, mode, standard deviation, range, skewness and kurtosis were computed for the academic achievement and presented in table-2.

**Table-2**

**Descriptive analysis of the variable Academic Achievement in Economics for Experimental Group and Control Group**

Groups	Variable (D)	Test	N	Mean (M)	Median (Mdn)	Mode (MO)	Standard Deviation	Skewness (SK)	Kurtosis (KU)

							(SD)		
Experi- mental Gpoup	Achieve- ment Test	Pre- test	27	39.26	38.64	38.5	10.67	0.17	-0.93
		Post- test	27	64.7	65.84	64.9	11.76	-0.29	-0.96
Control Group	Achieve- ment Test	Pre- test	26	39.16	39.94	39.94	8.76	-0.26	1.03
		Post- test	26	53.97	52.76	51	8.35	0.43	0.39

The table-2 shows that the mean, median and mode values of the pretest scores do not differ significantly, which indicates that the distribution is implied to be normal distribution. The skewness and the kurtosis values of the pre-test suggest that the distribution is normal. The negligible degree of positive and negative skewness shows how closely these distributions approach to normal form, hence, makes sure that the distribution is normal and which is one of the basic presumptions of t-test.

### **INFERENCEAL ANALYSIS**

To compare the accomplishment of both experimental and control groups on academic achievement inferential statistics has been used. Here, 't' test is used to compare the difference between two groups, i.e. experimental and control groups based on their achievement scores.

#### **t' TEST OF VARIABLE ACADEMIC ACHIEVEMENT OF EXPERIMENTAL GROUP**

't' test is applied to find out whether the Blended learning instructional strategy has improved the academic achievement of students belong to experimental group.

#### **HYPOTHESIS 1**

The null hypothesis indicates that there is no significant difference between the pretest and post test mean scores of experimental group. The hypothesis is tested by employing the 't' test and the result is displayed in table-3.

**Table-3: Result of Pretest and Posttest Outcomes of Experimental Group**

Groups	Test	N	Mean (M)	SD	Mean Difference	't' Value	Significance
Experimental Group	Pre-test	27	39.26	10.67	24.87	18.07	(0.01 level) Significant
	Post-test	27	64.7	11.76			

Table-3 shows that the 't' ratio for the difference in means of pretest and posttest scores of experimental group is found significant at 0.01 level of confidence. This states that there is a difference between the means of pretest and posttest scores of experimental group in academic achievement. Hence, the null hypothesis is rejected in favour of alternative hypothesis i.e, there is a significant difference between the pretest and posttest scores of the students taught by blended learning instructional strategies. The findings reveal that there is a significant difference in academic achievement which indicates that Blended-learning strategy has positive impact on academic achievement of students.

#### **t' TEST OF VARIABLE ACADEMIC ACHIEVEMENT OF CONTROL GROUP**

't' test is used to find out the academic achievement of students belong to control group who were taught by face-to-face traditional instructional strategies.

#### **HYPOTHESIS -2**

The null hypothesis indicates that there is no significant difference between the pretest and post test mean scores of control group. The hypothesis is tested by employing the 't' test and the result is displayed in table-4.

**Table-4: Result of Pretest and Posttest Outcomes of Control Group**

Groups	Test	N	Mean (M)	SD	Mean Difference	't' Value	Significance
Control Group	Pre-test	26	39.16	8.76	14.81	7.09	(0.01 level) Significant
	Post-test	26	53.97	8.35			

Table-4 shows that the 't' ratio for the difference in means of pretest and posttest scores of control group is found significant at 0.01 level of confidence. Hence, the null hypothesis is rejected in favour of alternative hypothesis i.e, there is a significant difference between the pretest and posttest scores of the students taught by face-to-face traditional instructional strategies. The findings indicate a moderate difference in academic achievement of students who were taught through traditional instructional method. But in comparison to the achievement of experimental group the level of achievement of control group was not so high because the control group was not exposed to the blended learning strategy.

### **t' TEST OF VARIABLE ACADEMIC ACHIEVEMENT OF CONTROL AND EXPERIMENTAL GROUP**

't' test was applied to make the comparison between the academic achievement of control group and experimental group as differential treatment was given to both groups. Students of experimental group were exposed to blended learning instructional strategy where the control group was taught through face-to-face traditional instructional strategies. To determine the effectiveness of blended learning strategy mean scores are compared.

### **HYPOTHESIS-3**

The null hypothesis indicates that there is no significant difference between the pretest and post test mean scores of control and experimental group. The hypothesis is tested by employing the 't' test and the result is displayed in table-5.

**Table-5: Result of Pretest and Posttest of Experimental and Control Group for Academic Achievement**

<b>Groups</b>	<b>Test</b>	<b>Mean (M)</b>	<b>SD</b>	<b>'t' Value</b>	<b>Significance</b>
Control Group	Pre-test	39.16	8.76	0.39	Not Significant
Experimental Group		39.26	10.67		
Control Group	Post-test	53.97	8.35	3.9	(0.01 level) Significant
Experimental Group		64.7	11.76		

Table-5 shows that the 't' ratio for the difference in mean scores of pretest for control group and experimental group is not found significant at 0.05 level of confidence. Hence, the null hypothesis

is not rejected. The result shows that in the pre-test, there is no significant difference in the mean scores of Experimental and Control group. But in the post-test, there is a significant difference in the mean scores of Experimental and Control group at 0.01 level of confidence. Hence, the null hypothesis is rejected in favour of alternative hypothesis i.e, there is a significant difference between the posttest scores of students taught by blended learning strategy and face-to-face traditional instructional learning method. On the basis of the study of mean scores of control group and experimental group, it is concluded that the blended learning strategy is effective than the face-to-face traditional instructional method for the academic achievement.

The significant effect was determined when the effect size analysis was carried out to ascertain the effectiveness of Blended learning strategy over the face-to-face traditional instructional method for the academic achievement. This large effect size was due the exposure of Blended Learning strategy by the students of experimental group.

#### **MAJOR FINDINGS OF THE STUDY:**

The results of the study pertaining to effects of blended learning strategy on social science achievement of senior secondary students have been presented below:

1. The findings reveal that the blended learning strategy is more effective than the face-to-face traditional instructional method for the academic achievement. The observation of means suggests that the students belong to experimental group performed better than the students of control group. It clearly indicates that blended learning strategy has improved the academic achievement for social science of senior secondary students.
2. The findings of the study reveal that there is a significant difference between the means of pretest and posttest scores of experimental group in academic achievement of social science. The observation of means suggests that the students belong to experimental group possess better academic achievement in post-test than pre-test. The findings indicate that the Blended learning strategy has improved the academic achievement of students in posttest.

#### **EDUCATIONAL IMPLICATIONS AND CONCLUSION:**

The findings of the present study have very important educational implications for inclusion of Blended learning strategy for the students at higher secondary level of education. The blended learning strategy can be a mode of instruction in coming time in all over our country. In comparison to the face-to-face traditional instructional method, Blended Learning instructional strategy provides a better environment which promotes high academic achievement in the students.

Moreover, the blended learning instructional strategy is a better alternative which can enhance better academic achievement of the students.

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