Comparative Analysis of Blended Learning and Conventional Methods in Enhancing the Achievement of Pre-Service Secondary Teachers in Inclusive Education

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ABSTRACT

This study is about how the Blended Learning Approach affects the achievement of pre-service secondary teacher's performance when it tries to study on Inclusion in Education. The main aim of this study is to focus how the Blended Learning Group and the Conventional Method Group perform on a test after they have been taught. The Blended Learning Group (BLG) (taught through Blended Learning Approach) is being compared to the Conventional Method Group (CMG) (taught through Conventional Method). For this experimental study criterion test was used to study the post-test effect. The sample of the study determine by dividing equally through adjusting mean scores of an intelligence test upon the students. The main aim of the study was to examine whether there is a significant difference in the performance of these two groups. The findings of the study revealed that the Pre-Service Secondary Teachers in the Blended Learning Group and the Conventional Method Group differed significantly....

Keywords: *Blended Learning, Secondary Education, Conventional Methods, Achievement*

INTRODUCTION

The present trend in educational systems is shifted from traditional, chalk and talk methods of learning to advanced flexible approaches which advocates student centric learning. Blended learning approach is one of those approaches. A blended learning approach combines both traditional (in-person) classroom instruction and e-learning components delivered through an interactive virtual environments to create a more individualized and personalized learning experience. The necessity for such innovative instructional strategies becomes even more apparent in the context of teacher education, where future educators must be prepared for diverse and inclusive classrooms. Although there is evidence that the blended learning approach provides the possibilities for improving learning outcomes, there a little empirical evidence is available that directly compares the effectiveness of blended or online teaching methods with traditional face-to-face methods in the area of teacher education, particularly regarding pre-service teachers' preparation to work effectively with all students (i.e., inclusion). Therefore, this study aims to examine how the blended learning approach effect the academic performance of pre-service teachers in secondary schools through comparing with traditional or conventional methods. The purpose of the study is to find out whether blended learning approach improves pre-service teachers' learning outcomes comparing with conventional or traditional classroom methods.

Objective of the study

To examine the effect (Post-Test effect) of Blended Learning Approach on the exposition of treatment among the Blended Learning Group and Conventional Method Group in the achievement of Pre-Service Secondary Teachers in Inclusion in Education.

Hypothesis (H01) of the study

There is no significant difference in the effect of (Post-Test effect) of Blended Learning Approach on the exposition of treatment among the Blended Learning Group (BLG) and Conventional Method Group (CMG) in the achievement of Pre-Service Secondary Teachers in Inclusion in Education.

Methodology of the study

Research Design: This study conducted using The Quasi experimental (Pre-test and Post-test non-equivalent group design) to investigate the post-test effects of the Blended Learning Approach on pre-service secondary teachers' achievement in inclusive education.

Sample and sampling: In this study, a purposive sampling technique was used to select 80 second-year B.Ed. students from Biswanath College of Education, Assam as its sample. The sample divided into two different groups viz. the Experimental Group (Blended Learning Group or BLG) and the Control Group (Conventional Method Group or CMG), with 40 students in each group. The groups were formed based on adjusted mean scores from an intelligence test (**Test of General Intelligence for college students** developed by **S.K. Pal** and **K.S. Mishra 2019)** to ensure comparability. Any participant who were absent for a continuously for a week during the experiment were removed from the study. To minimize the influence of extraneous variables, an assumptions test was conducted, ensuring that both groups were normally distributed.

Tools

A self-made criterion test was developed and standardized to measure the achievement of sample in the subject of Inclusion in Education. This criterion test was designed to assess knowledge, comprehension, application, and analysis related to inclusive education practices based on the module prepared for the experimentation.

Phases of the experiment

Phase I: The researcher formed two different groups based on the adjusted mean score of the intelligence test administered before the experimentation. After the formation of the group the researcher conducted the criterion test separately for each group.

Phase-II: In this phase the researcher gave the intervention in two different forms- for BLG uses Blended Learning Approach and conventional teaching strategy for CMG.

Phase-III: After the completion of the intervention the researcher conducted the post-test using Criterion Test to find out the post-test effect and compares the scores using appropriate statistical technique.

RESULT AND DISCUSSION

The result of the study was analyzed as per the objective and hypothesis of the study formulated and stated above. The t test was used to analysis of the data along with Mean, Standard deviation, Mean Difference were calculated and used for the analysis.

The null hypothesis (H_{01}) stated that there is no significant difference between the Post-Test achievement scores of the BLG and CMG. It is employed to assess whether there is a significant difference between the two means, of Post-Test scores, of both BLG and CMG. The hypothesis was tested, and the outcomes were stated in the table no.1 as given below-
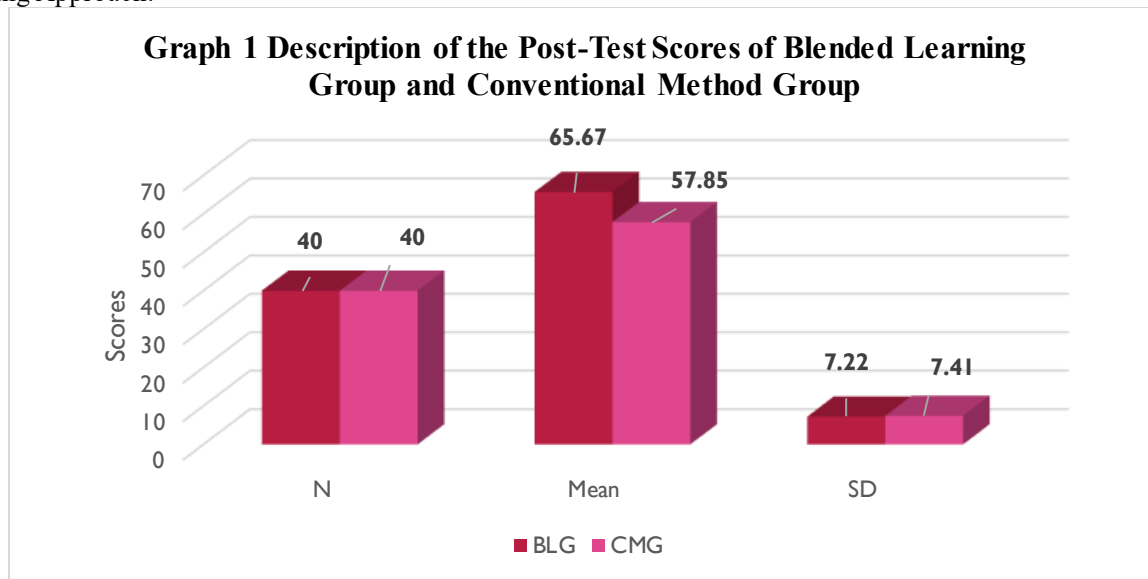
Table 1: Description of the Post-Test Scores of Blended Learning Group and Conventional Method Group

Group	N	Mean	SD	Mean Difference	SED	df	t	Remarks
BLG POST-TEST	40	65.67	7.22	7.82	1.64	78	4.78	**Significant (at Both 0.01 and 0.05 level)**
CMG POST-TEST	40	57.85	7.41					

The table no. **1** reveals that the calculated t value was 4.78 between BLG and CMG in Post-Test which was significantly greater than the table value that is **1.99** at 0.05 and **2.64 at** 0.01 level of confidence respectively at df 78. For which study can reject the formulated Hypothesis (H$_{01}$) "***There is no significant difference in the effect of (Post-Test effect) of Blended Learning Approach on the exposition of treatment among the Blended Learning Group (BLG) and Conventional Method Group (CMG) in the achievement of Pre-Service Secondary Teachers in Inclusion in Education***". The Mean Deviation was found to be **7.82** between the Groups, which help the study to conclude as BLG and CMG were significantly differ in their achievement scores in Inclusion in Education. These results underscore the impact of the Blended Learning Approach on improving the achievement of Pre-Service Secondary Teachers, with BLG demonstrating a notably higher Post-Test performance compared to CMG.

As a result, H$_0$ (the null hypothesis) has been rejected at both the 0.01 and 0.05 confidence levels. It was revealed that the

Pre-Service Secondary Teachers in the Blended Learning Group and the Conventional Method Group differed significantly. It may be summarized as the Blended Learning Group used a variety of digital tools during instruction process. Similarly the Pre-Service Secondary Teacher's achievement improved significantly, in comparison to the Pre-Service Secondary Teacher in Conventional Method Group, the utilization of digital materials increased the students' motivation and interest. The BLG presented teaching through the Blended Learning Approach was more successful than teaching with the Conventional Teaching Approach.

Graph 1 Description of the Post-Test Scores of Blended Learning Group and Conventional Method Group

Source: Primary Data

FINDINGS OF THE STUDY

The study found a significant difference in the post-test scores between the Blended Learning Group (BLG) and the Conventional Method Group (CMG), indicating that after receiving the treatment, the BLG outperformed the CMG. The pre-service secondary teachers in the BLG were taught using a blended learning approach that combined online and digital resources with in-person teacher support, leading to enhanced performance and the CMG was taught through traditional or chalk and talk method methods in a classroom, the results indicates that pre-service secondary teacher showed higher level of engagement and better performance by using digital and online resources for instruction. Thus, using a blended learning or online teaching encounter the pre-service secondary teachers showed to be more effective than the traditional method.

CONCLUSION

From the above discussion and the findings of the study it can be concluded that the null hypothesis (H_0) was rejected at both the 0.01 and 0.05 confidence levels, which indicates a significant difference between the Blended Learning Group (BLG) and the Conventional Method Group (CMG). It can be concluded that the teaching learning process by implementing digital tools for the BLG significantly enhanced the achievement of pre-service secondary teachers comparing to those in the CMG. The pre-service secondary teachers' motivation and interest were increased through implementing digital resources into the blended learning group (BLG). Digitally supported teaching strategies in the blended learning group (BLG) are also more effective than those provided by the conventional teaching method in the conventional method group (CMG)..

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