BLENDED E- LEARNING AND ACADEMIC ACHIEVEMENT: AN EXPERIMENTAL STUDY

***Dr. Kusum**

ABSTRACT

Education is one of the sectors that have benefited most from the modern technical innovations. With this development, time and space are no more barriers to education. As a matter of fact, the concept of distance learning has been transformed to what is now known as blended-learning programs. In this paper the role of Blended E-Learning in academic achievement was studied on secondary school students in Punjab. This study revealed that Blended E-learning elevated the academic achievement of secondary school students. The difference of scores between male and female students was not found significant on the p<.5 level of significance. Blended- E Learning enhanced the annual performance of secondary school students.

Keywords: Blended E-Learning, Achievement, Experimental, Secondary, Students

INTRODUCTION

E-learning is essentially electronic learning and is delivered through a computer. In different sectors and with different people the meaning of e-learning differs. For instance, in the field of business it refers to the strategies used by a company network to give training to its employees. In many Universities, the term is used to mean a specific method to convey contents of course or program to the students online. Many higher education systems now a day are offering e-learning to their students. Blended E-learning is also known as mixed, sandwich, hybrid learning, is a method that conflates traditional learning environments in which led by teachers and technological based e-learning.

Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university.

***Associate Professor, Govt. College of Education, Sector-20 D, Chandigarh;**

Email ID: kusumhindi06@gmail.com

All criteria have in common that they represent intellectual endeavours and thus, more or less, mirror the intellectual capacity of a person.Therefore, Academic Achievement is the outcome of education the extent to which a student, teacher or institution has achieved his educational goals. It is commonly measured through examinations or continuous assessment. Academic achievement has become a yardstick of self-worth and success. The outcome of education determines the quality of life, progress and status of people living anywhere in the world (Mayuri and Devi, 2003).

RESEARCH REVIEW

Blended E-learning

Means, B; Toyama, Y; Murphy, R; and Baki, M. (2013) conducted a meta-analysis toproduce a statistical amalgamation of studies contrasting learning outcomes for either fully onlineor blended learning conditions with those of face-to-face classroom instruction.The learners were divided two categories and the average age was 13 to 44. The results revealed that blended learning was more effective than that of face to face interaction.

Aladejena (2009) performed the blended learning model to teaching. The results showed that there was no significant difference between pre-test scores of both the groups; instead, the results also revealed that there was a significant difference between the post-test scores in favour of the experimental group.

EL-Deghaidy and Nouby (2008) used a cooperative-based blended e-learning environment in study conducted by them. The sample of the study was 26 teachers. Two experimental group and a control group were formed. The findings of study indicate that the experimental group performed better than the control group.

Mohammed Abdo (2008) presents another study encouraging using blended learning. This study reported that blended learning has several advantages; teacher feels that his role in the educational process have not been taken away the cycle. Furthermore, this study provides two ways for learning that teachers can choose between them rather than relying on one way. It also addresses the problems of the lack of possibilities for some students.

Kavaliauskiene (2008) used podcasting as a tool for listening skills. The results gave visions into a practice of evolving listening capability. Some suggestions of research are described including a reference for blended learning, i.e. combination of multiple by toning

online listening with classroom audition activities in teaching or learning English methodologies to learning.

Academic Achievement

Yurdakul and Cobanoglu (2014) revealed that blended e-learning based program had a progressive effect on the students' achievement, cognitive tractability levels and self-regulated learning skills. Blended e-learning based program employed directed students to think, inquire and explore the subject matter, discuss and appraise others' opinions. This study suggested the need of planning e learning based approach in process of education at higher education studies.

Chohan and Masrur (2010) investigated the impact of web based resource material on learningoutcome in open distance higher education. The study concluded that integration of IT in teaching-learning increased the understanding of subject related knowledge.

Melton (2009) studied achievement and satisfaction in blended learning versus traditional general health course designs. Achievement by students of blended and traditional sections brought mixed findings. Blended approach improved the grades significantly.

Williams et al. (2008) reported improving student achievement and satisfaction by adopting a blended learning approach in inorganic chemistry. After introducing blended learning at the level 2 inorganic chemistry module in 2004/2005; the improvement was maintained in 2005/2006. The feedback provided by the students backed Blended E- learning over other traditional methods.

OBJECTIVES

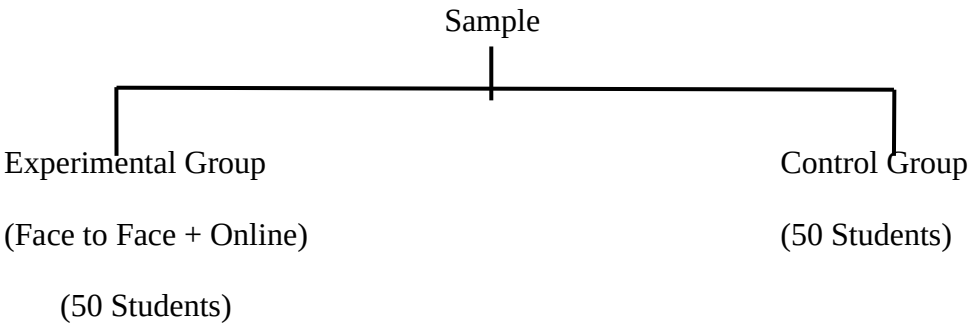
- To study the effect of Blended E-learning on academic achievement of secondary school students.
- To compare the effect of Blended E-learning and Traditional teaching method between male and female secondary school students.
- To compare the effect of Blended E-learning and Traditional teaching method on annual scores of secondary school students.

HYPOTHESES

- There will be no significant effect of Blended E-learning on academic achievement of secondary school students.
- There will be no significant effect of Blended E-learning and Traditional teaching method on male and female secondary school students.
- There will be no significant effect of Blended E-learning on annual scores of secondary school students.

SAMPLE

The Study was performed in Sangrur District of Punjab. The total number of Government Schools in Sangrur are 347. For this purpose, one school was chosen to conduct the experiment.The sample size for study was 100 secondary students. The students were assigned into two groups.



DESIGN

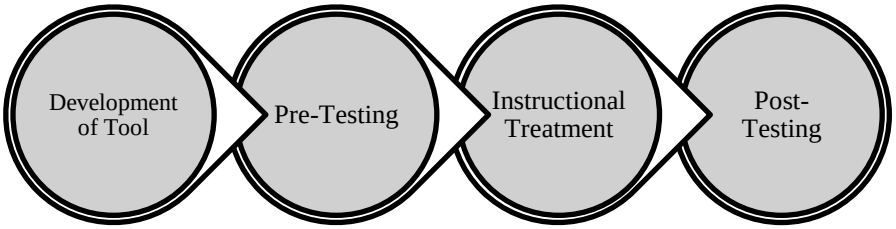
The study was based on experimental research. A pre-test and post-test was conducted on control group and experimental group. Pre test scores among groups were equated by of t-test and Post- test-score analysis was done using ANOVA and Leaven's test. The experimental group was taught through blended learning, whereas control group was taught with traditional teaching strategy by the investigator. Experiment group was taught with the I-Secula App and face to face Interaction for 30 days and control group was taught by traditional method.

TOOL

Teacher Made Academic Achievement Test

Achievement of students in final term Examination.

PROCEDURE



RESULTS

Hypothesis-1

There will be no significant effect of Blended E-learning on academic achievement of secondary school students.

The researcher investigated the difference between control group and experimental group in respect to their academic and annual term achievement score. Two factor analysis of variance for repeated measurements on a single factor using ANOVA test. The analysis of scores in table -1 showed a significant difference in achievement scores.According to scores in all groups of pre-test and post-test, there was a significant difference between scores of pre-test and post-test($F_{(1,99)}=9.35, p<.05$). The pre- tests and post –test analysis showed that students in the experimental group equated to the last test measuring the difference between the academic achievement scores ($F_{(1, 99)} = 252.25$; $p <.05$). The experimental group students' pre-test and post-test were found to be significantly different from the control group students' pre-test and post-test scores in academic achievement deviations. ($F_{(1, 99)} =42.33$, $p <.05$).Therefore, the null hypothesis that there will be no significant effect of Blended E-learning on academic achievement of secondary school students stands rejected.

Table1. Comparison of Experimental and Control groups' results of pre-test and post-test in terms of academic achievement (p<.05)

Source of Variance	Sum of Squares	df	Mean Sq.	F	P	Significance
Between groups Experimental and Control groups	1690.39	1	1690.39	9.35	.007	.142
Error	10449,74	99	105.545			
In Groups						
Measure (pre-test-post-test)	12567.54	1	12567.54	252.25	.000	.852
Group* Measure	1590.95	1	1590.95	42.33	.000	.428
Error	3384.54	99	34.18			
Total	68504	100				

Hypothesis-2

There will be no significant effect of Blended E-learning and Traditional teaching method on male and female secondary school students.

To determine whether there are significant differences between groups in different gender groups in respect to academic achievement score ANOVA test. The test results showed that there was no significance difference on achievement in terms of gender.($F_{(3, 97)} = 8.59$, $p < .05$).Therefore, the null hypothesis that there will be no significant effect of Blended E-learning and Traditional teaching method on male and female secondary school students stands accepted.

Table-2. Comparison of post-test scores in terms of gender (p<.05)

Variable	Source of Variance	Sum of squares	df	Mean Sq.	F	P

Gender	Between groups	3546.298	3	1,182.09	8.59	.000
	In Groups	8923.358	97	91.993		
	Total		100	34.18		

Hypothesis-3

There will be no significant effect of Blended E-learning on annual scores of secondary school students.

In order to assess whether there is a significant difference between annual scores grade averages of the experimental group and the control group, the independent sample tests were performed. The analysis showed that there is a significant difference between groups in favour of experimental group The average grade scores of the experimental group was 85.50 while average grade score of the control group was 70.89. Therefore, the null hypothesis that there will be no significant effect of Blended E-learning on annual scores of secondary school students stands rejected.

Table-3. Comparison of Annual Scores of group of experimental and control. (p<.05)

Leven Test							
Groups	n	x	SS	F	P	T	P
Experimental	50	85.50	10.53	.01	.952	2.95	.12
Control	50	70.89	12.33				
Total	100						

CONCLUSION

The experimental intervention revealed that the experimental group who has studied in blended learning environment is academically more successful than the control group. Blended learning shows that qualities and quantities of interaction of blended learning environments directly influenced the academic achievements, experienced, senior learning skills of students. The results of the study revealed the following facts.

- Blended-E Learning elevated the level of Achievement of the students.
- Achievement through Blended-E Learning did not get affected by gender.
- Blended-E-Learning commenced positive effect on Academic Achievement.

REFERENCES

Aladejena, F. (2009). *Blended Learning and Technology-Assisted Teaching of Biology in Nigerian Secondary Schools*. Special Edition of the World Congress on Engineering and Computer Science: 133-140.

Boudinot, S. G., &Bradley, M. C. (2001). Online Anatomy Lab (OAL): A Self-Regulated Approach to the Instruction of Human Anatomy. *Interactive Multimedia Electronic Journal of Computer-Enhancedlearning, 3(1).*

Brahmasrene, T., & Lee, J. W. (2012). Determinants of intent to continue using online learning: A tale of two universities. *Interdisciplinary Journal of Information, Knowledge, and Management, 7*, 1-20. Retrieved from http://www.ijikm.org/Volume7/IJIKMv7p001-020Brahmasrene540.pdf

Colvin R and Mayer R. (2008). E-learning and the science of instruction. California: John Wiley.

Cox, M. J, and Britain, G.(2003). ICT and Attainment: A Review of the Research Literature; a Report to the DfES. DfES.

El-Deghaidy, H. &Nouby, A. (2008). Effectiveness of a Blended E-Learning Cooperative Approach in an Egyptian Teacher Education Programme. *Computers & Education*, 51, 988–1006.

Garnham, C. &Kaleta, R. (2002). Introduction to Hybrid Courses. *Teaching With Technology Today*, 8 (6). Retrieved on 02 December, 2017 from

Kavaliauskienėm, G. 2004. Research into Reading-Writing Connections in ESP. The Internet Journal 'English for Specific Purposes World', http://esp world.info/Articles/GK1203.htm.

Mazman, S. G., &Usluel, Y. K. (2011). Gender differences in using social networks. The Turkish Online Journal of Educational Technology, 10 (2), 133-139.

McCampell, B. (2001). Blending the basics. *Principal Leadership*. September, 71 –73.

Means, B; Toyama, Y; Murphy, R; and Baki, M. (2013). The Effectiveness of Online and Blended Learning: A Meta-Analysis of the Empirical Literature. *Teachers College Record* Volume 115, 030303.

Melton B. (2009). Achievement and Satisfaction in Blended Learning versus Traditional General Health Course Designs. *International Journal for the Scholarship of Teaching and Learning.* Volume 3, No. 1 Article 26.

Mohammed A. (2008). "E-learning and the need to get rid of the traditional methods used in creating more ease and less supervision and educational assessment is based on the foundations of electronic", 2008.

Panda, S. and Mishra S. (2007). E-Learning in a mega open university: Faculty attitudes, barriers, and motivation. Educational Media International, 44 (4), 323-338.

Ramabai, A., Adinarayana, K., &AnandavalliMahadevan (2001). An Experiment for Introducing Biotechnology in Higher Secondary Schools. Experiments in Education, 29(7): 126-128.

Valiathan, P. (2002). Blended Learning Models. Learning Circuits. Retrieved on 22 November, 2017 from www.learningcircuits.org/2002/aug2002/valiathan.html

Venkatesh, V., Morris, M. G., Hall, M., Davis, G. B., Davis, F. D., & Walton, S. M. (2003). User Acceptance of Information Technology: Toward A Unified View 1. *MIS Quarterly*, *27*(3), 425–478.

Wang, Y., Wu, M., & Wang, H. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British Journal of Educational Technology*, *40*(1), 92–119. doi:10.1111/j.1467-8535.2007.00809.