

Impact of Blended Learning Strategies on Academic Performance of Secondary School Students

Mr. Dinesh Kumar*

*Assistant Professor, Department of Education, Lovely Professional University, Phagwara, India

E-mail: dinesh.12648@lpu.co.in

Abstract

*The present study explores the effect of blended learning strategies on academic achievement of secondary students in Punjabi language. The other objectives of the study were to develop blended learning strategies in Punjabi language for secondary school students to investigate about the perception of students towards blended learning strategies in Punjabi language. The study was delimited to the purposively selected 35 students of 9th grade government senior secondary school students of Jalandhar district in Punjab. One Group Pretest-posttest experimental design was used to find out the effectiveness of blended learning strategies. The self-developed traditional lesson plans in Punjabi incorporating blended learning strategies, self-developed Academic Achievement test in Punjabi language and questionnaire on perceptions of school students towards blended learning strategies developed and standardized by Ja'ashan (2015) has been used to collect the data. Paired sample. *t*'test was computed and qualitative analysis was done to investigate perception of students. It was found that the students have shown improvement in their academic achievement as a result of intervention of blended learning strategies. The students have positive perception towards blended learning strategies in Punjabi language.*

Key Words: Blended learning strategies, Academic achievement, Perception

Introduction

The purpose of education is to prepare contributing individuals that can use their knowledge, emotions and skills to develop and sustain themselves as well as others. The education in 21st century comes with challenges, opportunities and solutions. The major challenges are digital learner (more ICT enabled digital learner), the fast growing body of knowledge (subject), bringing equity in educational resources, technological advancements, new pedagogical, philosophical and psychological theories in education, and demands of dynamic society. The traditional instructional approaches can not meet all these challenges effectively. In the fast growing digital world, the fully on line approaches, to some extent, meet the challenges relating to professional development but these are less effective in inclusive, multicultural, differentiated, and constructivist situations where the presence of teacher is utmost required. At such crossroads, the blended learning environments provide us with the opportunities to meet the challenges of 21st Century. In the past both traditional face to face and on line learning environments were separate and addressed the needs of different learners. Face to face education characteristically occurs inside traditional classrooms, educator heading for environments where human being to human being communication is required. Whereas on line learning occurs mostly in distance learning is self paced and learner is at a distance. The appearance of scientific innovation in excess of the last half century and their application in teaching learning process brought these two separate entities of the past more closer. Computer assisted instructions and supported collaborations,

virtual communities, instant messaging, social networking sites and blogging etc has emphasized upon mixed environments containing the best of both worlds i.e. traditional & on line. This intersection depicts the emergence of blended learning systems. These systems help in improving the pedagogy, increasing the accessibility, and increasing the cost effectiveness (Graham et.al. 2003). In India, in the early 21st Century, the instructional strategies were based on behaviourism, mainly Harbartian approach and constructivism, in the form of activity based designs. The technology has no place in the process of instructional development. The teacher educators, teachers, and learners by their own have integrated ICT in their teaching learning process as per their conveniences. Researches on blended learning by Tuckman (2002), behaviorist and hybrid models (Marques and Woodbury et.al, 1998), Dziuban, Hartman and Moskel, (2004), as separate models or in comparison with traditional model (Dziuban, Hartman and Moskel, 2004, Rovai & Jordan, 2004) has been conducted. But no such specific researches on effectiveness of blended learning at school level have been conducted in India. Blended learning as an instructional approach inculcates mobile technologies in the standard classroom. The inclusion of mobile provides more personalized experiences but one of the major challenges is creation of well designed content and creation of suitable environment.

The success of blended learning systems at any level i.e. activity level, institution level, course level and programme level, can be seen in the satisfaction level of its prime stakeholders i.e. learners. So, the study was conducted to investigate the perception of students towards blended learning and explore the effect of blended learning strategies on academic achievement of secondary students. The study intends to notify some potential blended learning strategies in language teaching and learning according to the age, class and level of students. The blended learning provides equality of educational opportunities and equitable access to learning resources to all the students in a cost effective manner. It involves effective technology integration at secondary level in language learning. This is an attempt to solve the problems of Indian Education System by providing universal access and equality in educational opportunities in true sense.

The objectives of the study were to develop blended learning strategies in Punjabi language and explore their effect on academic achievement, and investigate in to the perception of students towards blended learning strategies. The hypotheses has been formulated as there exists no significant effect of blended learning strategies on academic achievement of secondary school students and the students hold positive perception towards blended learning strategies in Punjabi language. The only limitation to the present study was that it was delimited to the 35 students of 9th grade selected through purposive sampling techniques from one senior secondary school in Punjab.

Design of the study

The study was experimental in nature involving both qualitative and quantitative inferences. The proposed study has changed the course of design with attainment of each set objectives. Secondary data analysis, focused group interview, in depth interviews has been conducted to develop blended learning strategies. One Group Pre test-post test experimental design was used to find out the effectiveness of blended learning strategies. Academic scores of students taught by their regular teachers through traditional approach were considered as pre-test scores. In the present study blended learning strategies were independent variables and academic achievement was dependent variable. Further, qualitative analysis has been done to find out the perceptions of

school students towards blended learning strategies. The tools used in study were traditional lesson plans in Punjabi incorporating blended learning strategies, Academic Achievement test in Punjabi language and Questionnaire on perceptions of school students towards blended learning strategies. The step by step procedure followed during the conduction of the study is given below;

- Development of blended learning strategies
- Development of contemporary Punjabi lesson plans incorporating blended learning strategies
- Teaching students of class 9th by researcher (15 lessons)
- Perceptions of students (through questionnaire)
- Qualitative analysis and t' test

In planning phase, the researcher developed 15 lesson plans for Punjabi subjects of 9th class incorporating blended learning strategies. After that the investigator selected the school and took the permission of principal of the school to exercise the Blended learning strategies to 9th grade student as a part of research process. A schedule for experiment Blended learning strategies was prepared. The expert opinions were taken for the construction of the test. The items of the test were prepared in Punjabi language. The data was collected using a questionnaire developed and standardized by Ja'ashan (2015). The t' test has been used to find out effect of blended learning strategies on academic achievement of secondary students in Punjabi language. Qualitative analysis has been done to analyze the perception of Punjabi language students towards blended learning strategies.

Results & Discussions

One of the objectives of the study is to develop blended learning strategies in Punjabi language for secondary school students. Secondary data analysis, focused group interview, in depth interviews has been conducted to develop blended learning strategies. Investigator developed lesson plans in Punjabi subject with special emphasis on blended learning approach by incorporating the skill named developing and using blends at various stages of lesson development and delivery in selected class. This micro skill, micro skill on developing and using blends, has been developed by Kumar (2016) for teacher training institutions and they had used it with constructivist approach to lesson planning developed by Robert Bybee. The description of some of the blended learning strategies is given below in table 1

Table 1
Blended Learning Strategies in Punjabi Language

S. No.	Topic	Sub-topic	Blended learning strategy (Blend of face-2-face & online resources)
1	Bhai Veer Singh	Poem 'Samma'	Live video streaming on life of Bhai Veer Singh, Audio on Samma poem, Reading from book, Animation video on time, Use of Board for difficult words
2	Bhai Veer	Binfasa Da Full	Use different flowers for P.K Testing, Use of

	Singh		Wikipedia on Binfasa da full for elaboration, Reading from book, Use of Board for difficult words, Audio on Binfasa Da Full poem
3	Bhai Veer Singh	TukriJaggTohNiyari	Reading from book, Use of Board for difficult words, Audio on TukriJaggTohNiyar poem, Video on beauty of Kashmir
4	Bhai Veer Singh	Brish	Reading from book, Use of Board for difficult words, Audio on Brish poem , Animation video on save trees, Field trip of school park, Video on pollution for save environment
5	Dhani Ram Chatrik	VhindaJaaye	Pictures of Dhani Ram Chatrik Power point presentation on Dhani Ram Chatrik and his books, Chart on water cycle, Reading from book, Audio on VhindaJaaye poem, Video on water cycle

The second objective was to explore the effect of blended learning strategies on academic achievement of secondary students in Punjabi language. The null hypothesis has been formulated as there is no significant effect of blended learning strategies on academic achievement of secondary school students in Punjabi language. To test this hypothesis paired t' test was computed as shown in tables 2 given below.

Table 2
Effect of Blended Learning Strategies on Academic Achievement of Secondary Students

Test	N	Mean	S.D.	p- value	Remarks
Pre test	35	32.65	7.37	0.00*	p-value<0.05
Post test	35	41.20	5.31		

*significant

From the table 2 it is clear that the mean score of the students in pretest is 32.65 and scores in posttest is 41.20 and the standard deviation in pretest is 7.37 and standard deviation in posttest is 5.31. From comparison of means it is clear that students have shown improvement in their academic achievement as a result of intervention of blended learning strategies. The table 2 shows that the p-Value comes out to be .000 which is less than the 0.05. So, the difference in pre-test and post-test is statistically significant. It can be concluded that there is significant effect of blended learning strategies on academic achievement of secondary school students in Punjabi language. The similar result has been found by Owston (2013).

The last objective of the study was to investigate about the perception of students towards blended learning strategies in Punjabi language. To attain the objective, questionnaire on students' perceptions towards blended learning was administered on students after intervention of blended learning strategies. The Statements in the questionnaire were categorized into 3 main domains viz. students' perceptions and attitudes towards blended learning strategies, the negative impressions of students towards blended learning strategies and the perception of students

towards concepts of blended learning. The domain wise analysis of responses of students is given below:

Table 3
The Perceptions and Attitudes of Students Towards Blended Learning Strategies

S. No.	Statement	Mean of response	Response
1	Increased engagement with the course	3.8	SA
2	Blackboard activities give chance to read& reflect	4	SA
3	Blended Learning foster interactivity	4	SA
4	Make Punjabi language skills better	3.8	SA
5	Blended learning is easy	4	SA
6	Blended learning is collaborative	3.7	SA
7	Blended learning courses are useful and interesting	4	SA
8	Enhances teachers- students interaction	3.8	SA
9	Activities are clear & specific	3.9	SA
10	Provides time to work according to ability	4	SA
11	On-line & offline activities presented logically	4	SA
12	Peer connect enhanced	4	SA

The students perceive blended learning as easy, collaborative, useful, interesting, time saving, and more engaging. They feel connected with each other and with the teacher. Their attitude towards blended learning is clear and positive. Table 3 shows that the students have positive attitude towards blended learning in Punjabi language. These results are in agreement with studies conducted by Wan et.al., 2011; Bendania, 2011; Akkoyunlu&Soylu, 2006, Ja'ashan, (2015).

Table 4
The negative impressions of blended learning strategies on students

S. No.	Statement	Mean of response	Response
13	Problem of slow internet connectivity	3	DA
14	I don't want to learn another course through BL	3.6	SDA
15	Blended Learning materials are unorganized	3.8	SDA
16	I feel isolated during the teaching through BL	3.5	SDA

17	problems in using technologies	3.3	DA
18	Blended Learning is a waste of time.	3.7	SDA
19	Blended Learning promoted cheating and other unethical practices	3.9	SDA
20	Blended Learning instructions are not easy to follow	3.3	DA
21	Blended Learning is difficult to execute.	3.4	DA
22	Blended Learning makes me socially isolated	3.4	DA
23	Blended Learning requires more face-to-face interactions	3.5	SDA
24	Blended Learning provides less knowledge than simple classroom environment	3	DA

The students showed their disagreement with the negative impressions of blended learning. They do not consider Blended Learning as waste of time, difficult, socially isolated activity which is poorly organized. Some of the students reported internet connectivity, use of technology as a problem in such environment and consider Blended Learning instructions' aren't easy to follow, because of which they don't want to learn through Blended Learning strategies.

Table 5**The perception of students towards concepts of blended learning**

S. No.	Statement	Mean of response	Response
25	Indigenous Videos provides innate experiences	3.1	A
26	Blended Learning setup is attractive	2.9	A
27	Blended Learning is more appropriate than face to face learning	3.2	A
28	Blended Learning helps in-depth understanding	3.3	A
29	Use of personal devices (cell phone, mp3 player, Audio) enhances learning.	3	A
30	I am satisfied with this course taught through BL	3.2	A
31	Blended Learning environment motivates to succeed.	3.3	A
32	Web resources are helpful	2.9	A
33	Experiences with Blended Learning are very enriching	3.6	SA
34	Blended Learning enables to use various computer programmes	3.3	A
35	Blended Learning develops content mastery	3.4	A
36	Traditional and online components supplement each other	3	A

37	Given an opportunity, I will take another course in BL mode.	3.4	A
38	The blended course improves understanding	3.4	A

The perceptions of students towards concepts of blended learning are positive. Students got opportunities to see & listen to native speakers that help them in understanding the original idea & language. Blended learning helps in developing deep insights about the content in an attractive & convenient manner. They feel motivated to achieve success by using their personal devices. They got enriching experiences and like to take other courses through blended learning module.

Conclusions

The study concludes that the students have shown improvement in their academic achievement as a result of intervention of blended learning strategies. The students have positive perception towards blended learning strategies in Punjabi language. Besides some limitations like small sample size, sample area of only one government school, the study, however, recommends that the blended learning should be used to teach the various school subjects. The government and private educational bodies should develop more e-content, video lecture, audio material etc. of high educational value for the use of students and teachers. As the students hold positive perceptions towards blended learning, teachers should apply blended learning strategies in the classroom teaching to improve the academic achievement of the students. Further study recommends that quality training should be given to teachers for using technology to frame effective blends. For further improvements, the study suggests that it should be conducted on large sample size, can be conducted on with other school subjects at state or national level. Further the study can be carried out in comparison with traditional face to face or fully on-line mode of instruction and the differences in academic achievement can be seen with respect to gender and type of school.

Bibliography

- Akkoyunlu, B., & Soylu, M. (2008). A study of student's perceptions in blended learning environment based on different learning styles. *Educational Technology & Society*, 11(1), 183-193
- Alvarez, S. (2005). Blended learning solutions. In B. Hoffman (Ed.), *Encyclopaedia of Educational Technology*. San Diego: San Diego State University. Retrieved on February 20, 2011, from <http://coe.sdsu.edu/eet/articles/blendedlearning/start.htm>
- Bendania, A. (2011). Teaching and learning online: King Fahd university of Petroleum and Minerals (KFUPM) Saudi Arabia, case study. *International Journal of Arts & Sciences*, 4(8), 223-241.
- Bonk, C. & Graham, C. (2005). Handbook of blended learning: Global perspectives, local designs. San Francisco, CA: Pfeiffer Publishing.
- Bonk, C. J., & Graham, C. R. (2012). *The handbook of blended learning: Global perspectives, local designs*. John Wiley & Sons.
- Driscoll, M. (2002). Blended learning: Let's get beyond the hype, *E-learning*. Retrieved on March 15, 2014 from <http://elearningmag.com/ltimagazine>
- Dziuban, C., Hartman, J., & Moskal, P. (2004, March 30). Blended learning. *ECAR Research Bulletin*. Available online at <http://www.educause.edu/ecar/>

- Dziuban, C.D., Moskal, P.D., Hartman, J. (2005). Higher education, blended learning, and the generations: Knowledge is power: No more. In J. Bourne & J.C. Moore (Eds.), *Elements of Quality Online Education: Engaging Communities*. Needham: MA: Sloan Center for Online Education.
- Graham, C. R. (2004). Blended learning systems: definition, current trends, and future directions. San Francisco, CA: Pfeiffer Publishing.
- Ja'ashan, M.M.N.H., (2015). Perceptions and Attitudes towards Blended Learning for English Courses: A Case Study of Students at University of Bisha. *English Language Teaching*; Vol. 8, No. 9, Canadian Center of Science and Education
- Kumar, D. (2016). Developing and Using Blends: Evaluating a Hybrid Micro-Skill for New Teaching Paradigm *Rupkatha Journal on Interdisciplinary Studies in Humanities Special Issue*, 3(2), 3-11. http://rupkatha.com/V8/n2/01_Using_Blends.pdf
- Mayer, R. (1999). Designing instruction for constructivist learning. . In C. M. Reigeluth (Ed.), *Instructional-Design theories and models: Vol. 2. A new paradigm of instructional theory* (pp. 141-160). Mahwah, NJ: Lawrence Erlbaum Associates.
- Moskal, P., Dziuban, C., & Hartman, J. (2013). Blended learning: A dangerous idea? *Internet and Higher Education*, 18, 15-23.
- Osguthorpe, R., & Graham, R.(2003). Blended learning environments definitions and directions. *The Quarterly Review of Distance Education*. 4(3), 227-233
- Owston, R., et al., Student perceptions and achievement in a university blended learning strategic initiative, *Internet and Higher Education* (2013), <http://dx.doi.org/10.1016/j.iheduc.2012.12.003>
- Rovai, A.P., & Jordan, H.M. (2004, August). Blended learning and sense of community: A comparative analysis with traditional and fully online graduate courses. *International Review of Research in Open and Distance Learning*, 5(2). Retrieved on March 15, 2010 from <http://www.irrodl.org/content/v5.2/rovai-jordan.html>
- Singh, H. (2003). Building Effective Blended Learning Programs, *Issue of Educational Technology*, 43, pp. 51-54
- Waha, B., & Davis, K. (2014). University students' perspective on blended learning. *Journal of Higher Education Policy and Management*, 36(2), 172-182.
- Wan Fatimah Bt Wan Ahmad, AfzaBtShafie, Josefina BarnacheaJanier. (2006). Students' perceptions towards Blended Learning in teaching and learning Mathematics: Application of integration. *Proceedings of National Seminar on Science, technology and Social Science*. pp 159-163.