ADOPTING BLENDED LEARNING METHOD AT HIGHER EDUCATION: EXPLORING THE STUDENTS' PERCEPTIONS, SATISFACTION AND ACADEMIC ACHIEVEMENT

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Original Article

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Abstract

The purpose of this study was to explore students' satisfaction, measure effectiveness of blended teaching technique and to see the difference in academic achievement of students learning with blended and face to face mode. Align with the aimed of the study, accessible population of the study was those BS Science education students who were learning thorough blended mode in Institute of Education and Research (IER) in Spring semester 2018. Purposive sampling technique was used to select desired sample (N=51). Blended learning toolkit (2011) was adapted to measure the perception, satisfaction and effectiveness of blended learning in undergraduate students. The reliability of the instrument was α = .883. The 50% content were taught through face to face interaction and remaining 50% through an online blog. It was found that integration of blended learning approach has influenced academic achievement of students because students' mean scores were higher in blended mode (M=42.0) contrary to traditional mode (M= 36.5). Most importantly, students claimed that blended learning approach was cost and time effective. Study concluded that blended learning facilitates students in conceptual understanding and students considering blended mode of teaching more effective, interactive, and productive.

Keywords: Blended learning, Online blog, Face-to-face learning, Pedagogical innovation, Satisfaction

Introduction

Since decades, education at tertiary level has been imparted in traditional and formal classroom settings. However, with the innovations in technology, many new techniques such as MOOCS, Flipped classrooms, AI in education and Blended learning is being adapted to facilitate the instructions. One of the most widely discussed innovation is Blended learning (Dziuban et al., 2018). Post- covid19 scenario has l transformed the learning paradigm to hybrid mode. Even many educators and researchers are refereed it as new normal (Rehman, 2016; Norberg et al. 2011, p. 207). Likewise, blended learning needs acceptance in institutes as it is becoming a common teaching method for last many years (Alammary et al., 2014).

Owston, York and Murtha (2013) stressed that blended learning approach has more benefits for the institutions, faculties and the studentsas compared to traditional or fully traditional, fully onlinelearning. Moreover,educational institutes can make efficient utilization of teaching learning

resources for enriched classroom environment to give a better edge to all the stakeholders. Cavanagh (2011) further support this notion that blended learning far more effective in terms of flexibility for classroom management than the traditional orthodox method for teachers and students alike. Highlighting its importance of blended learning, Allen and Seaman (2011) has described the four modes of learning as follows: i) face to face mode with zero per cent online constituent, (ii) web based having one to twenty nine per cent content taught through online, (iii) blended or hybrid mode in which 30-79 per cent content taught online and iv) fourth section is purely online where 80-100 per cent material is being taught through online. Lalima and Dangwal (2017) indicated many benefits of blended learning as (i) instructors and learners have ample time to work on collaborative activities in classroom; (ii) students get the benefit of web-based learning with traditional method of teaching; (iii) students have more scope of communication; (iv) students become more fluent in use of technology; (v) students develop different professional qualities in them and, (vi) it updates and enriches the content of the courses. McCown (2014) furtherargued that thorough blended learning approach, students learn to be cooperative and critical in group tasks. Koban-Koç and Koç (2016) asserted that with blended learning approach students learn how to think logically and they can move to advance stages of knowledge and skills. Varthis (2016) stated that "blended learning promotes higher order skills and active learning" (p.7). The findings of many studies revealed that this approach expand educational efficiency, accountability contentment productivity and make them self-directed learner (Krishan, 2016). Blended learningn also expands the intellectual capacity of students (Rivera, 2017). Numerous studies were conducted to explore the usefulness of blended learning approach with respect to students' perception, satisfaction and academic achievement.

Rationale of the study

In this context, mostly developing countries are still using i) and ii) modes in their instructions. However, many developed countries i.e. Australia, Finland and UK, are practicing iii) mode rigorously (Rehman, 2016). In Pakistan, the implementation of blended learning is an emerging concept and requires empirical evidence to expand it across the institutions.

Thus, this study explored students' perceptions, satisfaction, and see the difference in academic achievement of students' learning with blended and face to face mode.

Objectives of the Study

The objectives of the study were to:

1. Find out the students' perceptions regarding blended and face to facelearning in a course at university level

2. Explore the students' satisfaction regarding blended learning course at university level

3. Investigate the difference in students' academic achievement between face to face and blended course at university level

Research Methodology

Explanatory sequential design of mixed methods research n was employed to find out the perception, satisfaction and academic achievement of students at undergraduate level. Accessible population of the study was those BS Science education students who were learning thorough blended learning mode inInstitute of Education and Research (IER) in Spring semester 2018. Purposive sampling technique was used to select desired sample (N=51). The course outline of "School Community, Teacher" under BS Science Education program) was divided into two parts. The 50% content were taught through face to face interaction and remaining 50% through an online blog created by the researcher.

Conceptual Framework

The following conceptual framework was used in the present study. The course outline of "School Community, Teacher" under BS Science Education program) was divided into two parts. For course division and activities pictorial representation of it is given in Figure 1.
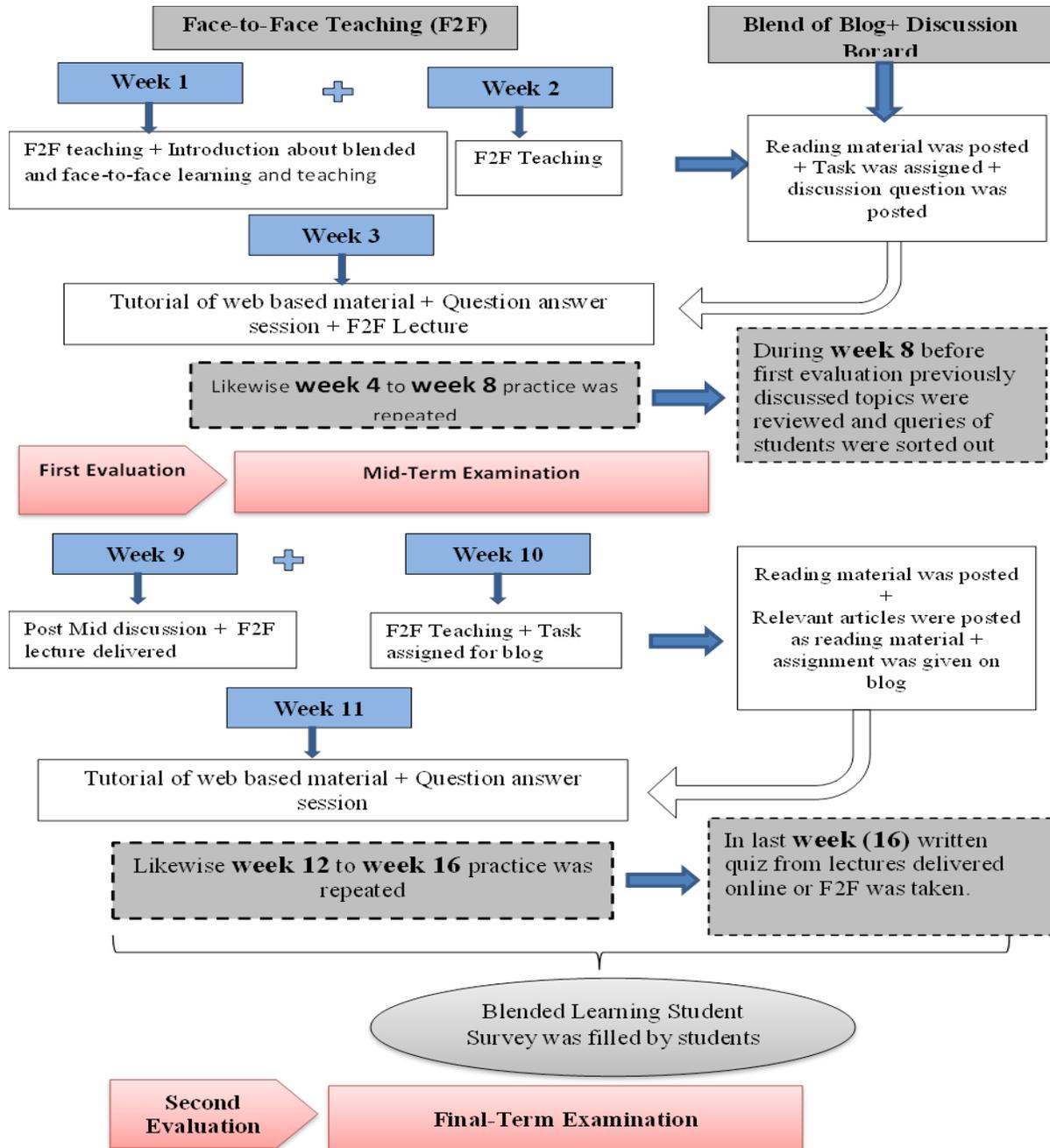
Face-to-Face Teaching (F2F)

Blend of Blog+ Discussion Borard

Week 1 + **Week 2**

F2F teaching + Introduction about blended and face-to-face learning and teaching

F2F Teaching

Reading material was posted + Task was assigned + discussion question was posted

Week 3

Tutorial of web based material + Question answer session + F2F Lecture

Likewise **week 4** to **week 8** practice was repeated

During **week 8** before first evaluation previously discussed topics were reviewed and queries of students were sorted out

First Evaluation | **Mid-Term Examination**

Week 9 + **Week 10**

Post Mid discussion + F2F lecture delivered

F2F Teaching + Task assigned for blog

Reading material was posted + Relevant articles were posted as reading material + assignment was given on blog

Week 11

Tutorial of web based material + Question answer session

Likewise **week 12** to **week 16** practice was repeated

In last **week (16)** written quiz from lectures delivered online or F2F was taken.

Blended Learning Student Survey was filled by students

Second Evaluation | **Final-Term Examination**

Figure 1: Conceptual framework of the study

Instrument of the Study

The blended learning toolkit (2011) was adapted and modified as per the researchers' requirements to address the objectives of the study. The toolkit contains close and open ended statements and was divided into four factors. First factor of the tool was about students' prior experience regarding blended learning approach. It has 5 questions. Second factor of the tool was about comparison of blended learning approach with face to face mode.This part has 11 statements. Thirdfactor of the tool was about the students perceptions regarding course effectiveness comprised of 17 statements. Fourth factor of the tool was about students' satisfaction regarding blended learning approach and comprised of 8 statements.

In qualitative part students were asked to share their opinions about blended learning in terms of their improvement in different skills. The reliability of the instrument was α =.883. To measure students' academic achievement in both modes (blended and face to face) content based test were developed and administered.

Data Collection

Tests were administrated twice (mid-term and final term) as per the course and university requirement. Both scores were merged for generating results. Blended learning toolkit (questionnaire) was sent to the whole class through online medium and were taken back at the end of the semester.

Findings of Quantitative Data

Based on the requirement of this study descriptive and parametric statistics (t-test) were applied to analyse data. A Shapiro-Wilk test was applied (p>.05) to see the normality of students' data. P –value α=.407 and normal histogram revealed that responses of students on blended learning toolkit/questionnaire were approximately normally distributed with the skewness of -.411 (SE =.333) and a kurtosis of .179 (SE =.656) for data. Thus a parametric statistics could be applied for analysis of students' data. There were 39 female and 12 male who took this course. 6 (six) of the students were repeating this course. All students were belonging to age group 23-27.

Factor I: Previous experience regarding blended learning

Data showed that 94% students were of the view that they had attended blended mode of learning first time. 98% student was using E-blog first time for this course only. 86% students were only taking this course in blended mode. Almost 95% students said that their interaction with their peers has significantly increased. Similarly, 90% respondents positively responded that their interaction with their course instructor was also improved.

Factor II: Comparison of blended learning course with face to face course

Table 1: Mean and SD of students' responses for comparison (n=51)

Statements	M	SD
I can easily ask questions in this course	4.3	.62
This course has improved my understanding of key concepts	4.2	.71
I am more engaged and interactive in this course	4.2	.58
I feel that the quality of my interaction with other student's was better	3.9	.65
I feel connected with other students in this course	3.9	.61
I feel that the amount of my interaction with other student's was increased	3.9	.59
This course allowed me not to come campus for the assignments completion	3.7	1.17
This course required more time and effort	3.6	.98
I am overwhelmed with information and resources in this course	3.2	.91
I feel isolated in this course	3.1	.99
I have trouble using technologies in this course	2.8	1.02

Above table explained students' perceptions on comparison of blended learning course with face to face course. First three statements showing high mean (M= 4.3, 4.2, 4.2, SD= .62, .71, .58) which shows that in blended learning mode students' understanding of key concepts is high. Similarly, this course has enhanced their engagements and interaction. Lowest mean was observed for facing hurdle while using technologies with M= 2.8 (SD=1.02). In rest of the statements mean scores were good which was depicting that students were considering blended mode of teaching more effective, interactive and productive.

Factor III: Students perceptions regarding course effectiveness
Table 2 : Mean and SD of students' responses regarding course effectiveness (n=51)

Statements	M	SD
This course reduced the cost or assignment pages and prints	4.4	.82
This course reduced the cost or assignment pages and prints	3.9	1.1
This course reduced the time boundary for the completion of tasks	4.5	.78
This course helped to improve the self-writing skill	4.3	.72
The Instructor communicated important course topics	4.3	.72
The Instructor communicated important course goals	4.4	.66
The Instructor provided clear instructions on how to participate in the course activities.	4.2	.99
The Instructor was helpful in guiding the class towards understanding course topics.	4.3	.89
The Instructor helped to keep students engaged and participating in productive discussion.	4.3	.89
The Instructor encouraged students to explore new concepts in the course.	4.1	.75
The Instructor helped to focus discussion on relevant issues in a way that helped me to learn.	4.1	.75
The instructor provided feedback in a timely fashion.	4.1	.75
Online communication is an excellent medium for social interaction.	4.1	.95
I felt comfortable participating in the course discussions.	4.0	.96
Course activities were interesting.	4.1	.87
I felt motivated to explore content related questions.	4.0	.96
I felt my ICT skills are improved after taking this course	4.1	.68

Table shows students perceptions regarding course effectiveness in terms of blended learning. All statements are showing high mean scores which means that students have taken this mode of teaching as the effective tool for learning. Students responded positively on statements that blended learning approach is cost and time effective, easy to understand and perform, increase interaction, more discussion and feedback oriented, and provides students a comfortable environment for participation.

Factor IV: Students' satisfaction regarding blended learning course

Table 3 : Mean and SD of students' responses on their satisfaction (n=51)

Statements	M	SD
Overall, I am satisfied with this course	4.3	.77
If given the opportunity I would take another course in the future that has both online and face-to-face components	4.1	.79
This course experience has improved my opportunity to access and use class content	4.2	.61
The online and face-to-face components of this course affect each other	3.8	.82
The course Blog site is well organized	4.6	.67
The course Blog site is easy to use	4.1	.69
The web resources in this course were helpful	4.3	.64
When I encountered a problem with the use of technologies in this course, instructor helped me with my problem in a timely and effective manner	4.4	.69

Above table presents the mean of students' perception on satisfaction with blended learning approach. Data shows that all statements of this section are depicting high mean scores by the students, which denotes that students are satisfied by this blended mode of teaching.

Comparison of academic achievement of scores with blended learning

Table 4: Independent sample t-test for student' scores on academic achievement

	N	Mean	SD	T	df	Sig
Blended Learning	51	41.98	3.07	12.40	51	.023
Face to Face learning	51	36.48	2.27			

The results indicated that students' academic achievement in blended learning is good as compared to the face to face teaching because blended learning mean score is greater than face to face teaching mean score and the result of test is significant.

Findings of Qualitative Data

Following were the analysis of qualitative data.Above mentioned items were extracted from students' responses under the questions.

Table 5: Improvement in Skills

Item	Frequency	Percentage
Writing Skill	18	35%
Reading Skill	14	27%
Enhanced Learning	7	13%
ICT Skills	6	12%
Thinking Skill	4	7%
Summarizing Skill	3	6%
Evaluation Skill	2	4%
Skimming and Scanning	1	2%
Ways of Learning	1	2%

Majority of students responded that this course had positive impact on the development skills i.e. reading, writing, thinking, summarizing, skimming and scanning, evaluation, and skills related to the usage of technology. 35% students reported the improvement in writing skill, 27% reported enhancement of reading skills, 13% had perception that blended learning course has enhanced their learning and 12% viewed that this course has enhanced their ICT skills. Furthermore, 7%, 6%, 4%, 2% and 2% reported the enhancement of thinking, summarizing, evaluating, skimming and scanning and ways of learning, respectively.

Table 6 : Improvement in Communication Skills

Item	Frequency	Percentage
Speaking Skill	4	7%
Sharing of Ideas	3	6%
Active Involvement	3	6%
Collaborative Learning	1	2%
Hesitation from Questioning Removed	1	2%

Students perceived that blended learning method has improved their way of communication i.e. speaking skill (7%), sharing of ideas (6%), active involvement in discussion and interaction with peers (6%), collaborative learning (2%) only one student highlighted an important aspect of this method, asking questions has removed hesitation.

***Table 7:* Suggestions for Future Students**

Item	Frequency	Percentage
Students should take this course	51	98%
Understanding about course will develop	7	13%
Skills improved	6	12%
Improved Communication	6	12%
ICT skills improve	4	8%
Students should not procrastinate	2	4%
Learn new gateways of knowledge	1	2%

Students were asked to suggest future students about taking a blended learning course. 98% reported that students should take this course as it improves conceptual clarity for students and develop their skills.

Discussion and Conclusion

This study aimed to find out the students' perceptions, satisfaction and its effectiveness in term of academic achievement in one of undergraduate degree program course where blended learning was integrated. It is noted that the students responded positively regarding effectiveness of blended learning approach which is also aligned to the literature that students' engagement in blended learning is comparatively strong as compared to face to face mode of learning (Shantakumari & Sajith, 2015; Melton, et al., 2009).

The findings of this study highlighted that students are satisfied with BL method because it increases their communication and different skills. Ja'ashan (2015) investigated students' perceptions and attitudes for BL approach for English courses at University of Bisha. These findings are also aligned with literature as students' satisfaction is higher in blended learning than face to face teaching (Harahap, Nasution & Manurung, 2019; Fakhir, 2015; Almasaeid, 2014; Castle & McGuire, 2010). Finally, students' academic achievement in blended learning is improved than face to face teaching and these findings are also supported by Ceylan and Kesici (2017). Usta and Mahiroğlu (2015) stressed that students were more successful academically as compared to online learning. Literature on blended learning and students' achievement also showed that students perform higher learning with blended course as compared to face to face. These results are also associated with the literature (Shantakumari & Sajith, 2015; Svanum & Aigner, 2011). Similarly, findings of Afacan's (2018) revealed that performance is directly and significantly influenced by blended learning satisfaction. Qualitative data of students' responses has highlighted four main categories regarding the effectiveness of BL course. Similarly, this kind of hybrid courses are making students self-regulated as one of students has stated, that:

> *This course has developed the ability of self-study. I have learn to plan my activities on time. This method is effective in many ways.*

Students reported that BL method was effective for the development of their skills i.e. writing skill, reading skill, enhanced learning, ICT skills, thinking skill, summarizing skill, evaluation skill, skimming and scanning and ways of learning. Secondly, they reported that blended learning course has improved their communication skills. Also, their rate of interaction with peers and instructor was increased and most importantly their speaking skill was enhanced. Thirdly, this course has developed better understanding about content and fourthly blended learning course was effective which is also supported by the literature (Khalil, Meguid & Elkhider, 2018; Lean, Ming, Wong, Neoh, Farooqui & Muhsain, 2018 & Brown, 2003).

Study has concluded that integration of blended learning has helped students in the understanding of the concepts. Most importantly, students responded that blended learning enhance their interaction, is feedback oriented, and provides students with comfortable environment for participation. In Pakistani context, blended learning mode is not integrated in its true sense but this study has reported positive results from the students' opinions.

Implications, Limitations and Future Research

The study found many positive advantages and implications of the implementation of blended learning approach in the curriculum of undergraduate students. First, Pakistani universities should train teachers on blended learning philosophy to adapt this teaching strategy in their instruction and

practices. Second, the study also found that blended learning is cost and time-effective which implies that it will be successful in a country like Pakistan where resources are limited. Students' time will be used in efficient way to make them active and self-regulated learners. Although, this study has positive results on the integration of blended learning course, however it has some limitations too. More studies may be conducted by involving teachers, administration, organizations, parents and other stakeholder's for the inclusion of blended learning approach in curriculum at universiry level.

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