

## Blended Learning Classroom Environment at University Level: A Panoramic View of Students' Perceptions

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### Abstract

The enhanced accessibility, capability and affordability of internet have created enormous pathways for creating, designing, developing and implementing innovative pedagogical strategies in classrooms. Blended learning is one such teaching strategy which integrates information and communication technologies in a traditional classroom setting. This study aimed at exploring post graduate students' perceptions about blended learning classroom environment and their preferences for ICT tools such as reflective videos, emails, Skype, WhatsApp and face book being used in their classrooms. Theoretical review for this research was based on social constructivist approach and connectivism providing a base that learning supported by digital networks help to connect specialized information sets to enable students to become active participants of teaching learning situation. Descriptive survey research design was used to collect data from 200 randomly selected social sciences students at MPhil level. Data was gathered through an adapted questionnaire by Chang & Fisher 1998 having 38 statements on a 2 point likert scale (yes/no) with an overall reliability of  $r=0.84$ . Students responded that blended learning classroom environment kept them motivated as they had control over their learning pace, time, path and place. They were comfortable using email and WhatsApp as ICT communication tools. Blended learning has many facets and it changes its range of ICT tools in context of developed and developing countries. In developed countries LMS, Moodle, flipped classrooms are completely incorporated at higher education level, whereas in Pakistan we are still at infancy stage of creating blended learning environment in classrooms. Therefore, it is recommended that educators and educational managers need to engage in intellectual dialogue to address their issues related to teaching modalities in a blended learning classroom environment and construct a viable model specifically designed for teaching learning institutions of Pakistan.

**Keywords:** *Blended learning, classroom environment, students' perception*

### Introduction

Emergence of technological breakthroughs in the field of information and communication technology has influenced teaching learning scenario also. This has enabled teachers to make a shift from traditional teaching methods and move towards adoption of such methods through which growing educational needs of students are satisfied. Newer technological tools and resources make learning environments more flexible and interesting. Traditional learning approaches alone may not have positive effect in achieving pre-determined learning objectives. In contrast to this, blended learning classroom environment which is featured

by traditional and

e-learning setting holds a significant place in educational scenario (Goolnik, 2006; Singh, 2003).

### Blended Learning as a Successful Approach

Blended learning is considered a successful approach for integrating information and communication technologies into a standard classroom environment with a distribution of 60-70% face to face interactions and remaining 30-40% in the form of on-line activities. Such environment provides a more personalized and student centred approach while still allowing pupils to have teacher access whenever required. However, blended learning environments are faced by three major challenges. Firstly, to create organized and well-designed content that maintains students' intrinsic motivation and strengthens their time management and computer using skills (Moskal, Dziuban, & Hartman, 2013). Secondly, to maintain students' satisfaction in this environment. Nowadays, several countries have adopted blended learning in higher level classroom for teaching a variety of subjects and it has been recommended that it is effective in learning, yet the level of student satisfaction remains debatable. Student perception about something also contributes towards the satisfaction level in learning. Student's perception is the perceived value of something related to his/her learning experiences in an educational setting (So & Brush, 2008).

### Application of Blended Learning in Classrooms: Challenges

The blended learning environments may face a third challenge also that could be impediment to their future growth. Teachers who have adopted this strategy state the administration of courses to be time-consuming while the students often experience frustration due to lack of technological expertise and communication problems (Crow, Cheek & Hartman 2013). Students' perceptions about blended learning classroom environment can be different in soft and hard discipline or in social sciences, management sciences and natural sciences. A meta-analysis conducted by Vo, Zhu and Diep (2017) shows that the effect of blended learning in hard disciplines is higher than that in soft disciplines. The explanation can be contingent on the blended learning design that must have been tailored to meet the requirements of these disciplines.

Interaction with information and communication technology in a blended classroom environment may become an added challenge sometimes. Dziuban et al. (2004) advise that blended learning also brings with it operational challenges. Blended learning classroom environments require multimedia equipped classrooms. Individual access and expertise for internet use is required to interact throughout the learning discourse. In some disciplines, operational challenges may pose a problem. Especially the students enrolled in social sciences may not have the competence to comprehend the lesson objectives with ICT very easily (Chen & Jones, 2014).

### Literature Review

Classroom environment refers to the social climate, physical and

emotional aspects of classroom. It's the idea that teachers influence student

learning, growth and behaviour. The student's behaviour affects peer interaction—the responsibility of influencing these behaviours is placed with the teacher. Teachers are manifested with a heavy responsibility due to globalization to incorporate ICT in their traditional teaching. The primary motive for integrating ICT in education is that it directs pupils towards their own reflective thinking, allows them to transcend their cognitive limitations, and engages them in concrete cognitive operations they may not have been capable of otherwise. ICT develops a culture of creative thinking and socialization; one that engages students with challenging yet personally meaningful goals, draws on students' conceptual world of intellectual experiences, and promotes active and reflective learning among students.

### **Social Constructivism in Blended Learning Classrooms**

Social constructivist classrooms tend to show the above mentioned features as major focus is towards a learner centred approach. Such classrooms encourage students to be actively involved in the process of learning and their own pace. Teachers and students embark on a journey of co-learning keeping in focus the ever-changing world view and not just the inert facts to be memorized. In this era, social constructivist classrooms are support by digital apparatus. It is an admitted fact now that in classrooms of digital era, learning does not simply happen within an individual student, but within and across the networks whether they be social or digital. Social constructivism encourages students to construct knowledge through interaction with peers/others and connectivism provides a base to emphasize in using ICT to develop such interactions (AlDahdouh, 2017; Driscoll, 2002) In blended learning classroom environment, cognition follows social constructivist learning supported by digital networks that help to connect specialized information sets to enable students become active participants of teaching learning situation. This framework can be displayed in the form of following diagram:

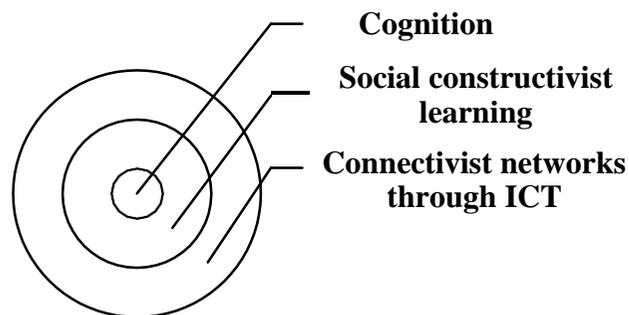


Fig.1 Placement of Social Constructivism and Connectivism in Classroom Cognition

Theoretical review for this study states that cognition leads to social constructivist learning in 21<sup>st</sup> century classrooms. These classrooms are characterised by digital networks provided through ICT.

ICT has not only become easier and robust to use with a passage of time, but has also greatly permeated academic activities at all levels and specially higher education. Innovative learning methods greatly support use of internet for web-based forums. Available research literature strongly supports ICT tools as successful elements of student engagement. Access to learning resources through ICT is a major feature of blended learning classroom environment. Researches have shown that students perceive that they can access the learning activities at times convenient to them, they are allowed to work at their own pace to achieve learning objectives, and flexibility in such an environment allows them to meet their learning goals (Tuncay & Bahadir, 2017).

### **Pros and Cons of Using ICT in Blended Learning Classrooms**

Blended learning classroom environment if developed properly, helps the students interact and respond to peers and teachers synchronously as well as asynchronously. The former such as chat room requires students to log on to a platform in order to connect with each other, while the latter as google groups/ google+ does not. Of the two modes of response through ICT, educators are in favour of asynchronous discussions because they are time- independent and students may respond and their own convenience and availability. In addition to this, students feel motivated to respond to peers' comments which could help them develop critical and reflective thinking (Cheung & Hew 2006).

Whereas there is a strong pedagogical argument in favour of blended learning classroom environment, however, the empirical evidence on relative effectiveness of blended approaches versus traditional approaches is a bit mixed. While some researchers have concluded that blended learning classroom environment clearly states learning objectives and outcomes thus making it more effective, while many others have found no differences in outcomes across the two modes of delivery (Dowling, Godfrey & Gyles, 2003; Larson & Chung-Hsien, 2009).

### **Students' Preferences in Using ICT Tools**

Students' preferences in using ICT tools also effect blended learning environment. As indicated by Lima (2006), the internet and ICT tools constitute a very valuable channel for dissemination of learning material in a blended learning classroom environment. There is abundant evidence in literature to support the argument that integration of internet, emails, skype and use of Facebook, twitter, WhatsApp can facilitate in achieving learning goals.

Teachers/Instructor need to take up a more scientific approach when analysing incorporation of information and communication technology in teaching learning scenario. Researchers have claimed that incorporation of ICT in classroom environment at university level still faces myriad challenges (Hew & Brush, 2007; Lim, 2002). Tondeur, Devos, Houttee, Braak, & Valcke, 2009 have suggested that applicable solutions can emerge only after structural and cultural aspects of an educational institution have been taken

into consideration where ICT integration is being planned. The structural aspect of the educational institution that needs to be taken into account includes elements such as classroom space distribution, specified ICT resources and their availability, support and maintenance of ICT resources. The cultural aspect includes the vision and mission of the educational institution highlighting ICT integration and support in learning environment.

Akkoyunlu & Soylu (2006), explored students' perceptions on blended learning environment and concluded that students felt motivated when participating in a blended learning classroom environment as compared to face to face classes. It was also concluded that students perceived accession to learning resources through ICT a challenging yet motivating task and liked online interactions more enjoyable as compared to face to face discussions.

Plethora of learning opportunities is available to students sitting in a blended learning environment. These learning opportunities include surfing on internet, using emails for information exchange, use of power point slides, skype online discussions or using social media, WhatsApp, face book twitter or indulging in professional graphic software, learning management systems etc. It is again worth mentioning that the cultural aspect of using a variety of tools for blended learning environment overpowers the structural aspect (Castle & McGuire 2010).

#### **Issues and Prospects of Blended Learning in Pakistan's Context**

Aslam, Waqar and Mehmood (2012), have assessed perceptions of Pakistani students while using ICT for learning and they have emphasized that students generally like asynchronous mode of lecture delivery where they access learning material at their own pace in a flexible manner. Mail correspondence was found to be most favourite mode of communication in addition to voice mail and recordings. They have suggested that computer mediated communication tools have enabled students to engage in cooperative problem solving, on-line discussions and peer tutoring. They opined that these are best accomplished by establishing virtual learning communities, which break down traditional instructor-as-transmitter, learner-as-receiver roles and instead promote a more learner-driven environment. Another study, done by Hussain (2007), explored students' attitudes towards e-learning in Pakistan. It was concluded that e-learning caters to larger community of students regardless of institutional boundaries and spreads over vast geographic regions. ICT support in e-learning is convenient and flexible for students, providing them a broader learning exposure as per global standards of education at higher level. However, Pakistani students do face some integral problems while using ICT in learning. These problems include disruption in internet connection, lack of computer skills, limited access to internet sources, etc.

There had been research evidences which show that blended learning has outperformed on-line and face to face learning. A major reason

behind has been quoted as it transcends the boundaries of space and time; building novel opportunities for students, teachers and educational institutions at higher level. It has been predicted that blended learning strategies will soon become established methods of teaching at university level (Bersin, 2004; Driscoll, 2002). Blended learning can increase access and flexibility for learners and is helpful to enhance their knowledge. Blended teaching can increase level of active learning and decreases passiveness of students and teachers. It has a very supportive role in gaining better students' experiences, outcomes and results. For teaching staff and faculty members, blended learning is also very beneficial and it improves teaching skills and class room management practices by all ways and means.

Perceptions of students at post graduate level who are among the key stake holders of higher education is absolutely essential to ensure successful implementation of blended learning in classroom. This study was conducted to determine students' perceptions regarding blended classroom environment and their preferences in using ICT tools for support in blended learning at higher education level in Pakistani context.

### **Theoretical Framework**

Theoretical framework of this study was based on web based learning environment factors which states that students' perceptions for blended learning can be assessed on four factors namely access, interaction, response and results. These factors have been highlighted by Chang & Fisher 1998, 2003 when they explored web based learning environment factors at tertiary level. This framework was adapted according to study objectives. For access subscale, students have to access on-line material successfully. Access subscale establishes the extent to which variables associated with accessing the learning resources meet students' expectations and level of satisfaction. Once the students have accessed the on-line material, then they should be able to interact with peers and teachers in a productive manner and get involved in self and peer evaluation. So the interaction subscale explores the extent to which the students achieve this from their own viewpoints. Response subscale explores students' feelings, level of satisfaction and motivation in using blended activities. Fourth one is results subscale which gives an over view of the extent of students' accomplishments of learning outcomes by using on-line learning resources in a blended classroom environment. Emails, skype, power point slides, WhatsApp and face book have been taken into consideration as commonly used and accessed blended learning tools by post graduate students. These tools were delimited after focus group discussions with 20 teachers of social sciences departments serving in two public sector universities of Islamabad region (National University of Modern Languages & International Islamic University, Islamabad). Through the focus group discussions, researcher was able to specify and delimit the blended learning tools currently being used in post graduate class rooms. Exploring blended learning practices on these ICT tools only is the

limitation of this framework, otherwise vast tools like smart

boards, learning management system etc. could have been included for data gathering.

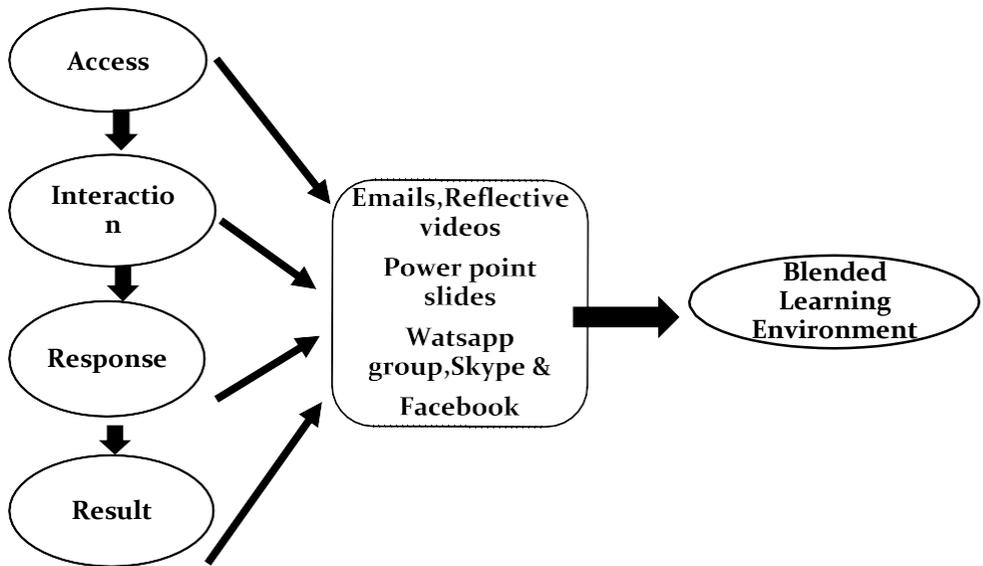


Fig. 2 Model adopted from Chang & Fisher (1998, 2003).

Students' Perceptions of the Efficacy of Web-based Learning Environment:  
The Emergence of a New Learning Instrument

Research Objectives

1. To investigate perceptions of post graduate students regarding blended learning classroom environment.
2. To explore preferences of post graduate students about using information and communication tools in blended learning classroom environment.

Null Hypotheses

- H<sub>01</sub> Access to study material through information and communication technology is not related to post graduate students' perceptions about blended learning classroom environment.
- H<sub>02</sub> Interaction with study material through information and communication technology is not related to post graduate students' perceptions about blended learning classroom environment.
- H<sub>03</sub> Response through information and communication technology is not related to post graduate students' perceptions about blended learning classroom environment.
- H<sub>04</sub> Results of using information and communication technology is not related to post graduate students' perceptions about blended learning classroom environment.

### Alternate Hypothesis

- H<sub>1</sub> Post graduate students' preferences about using information and communication tools in blended learning classroom environment differ from each other.

On the basis of research objective no.1, four null hypotheses were formulated which were rejected after statistical analysis of the data obtained at  $p < .05$  level. One alternate hypothesis was constructed based on research objective no. 2 and it was accepted at  $p < .05$  level.

### Research Design and Methodology

It was a descriptive survey study conducted at two public sector universities of Islamabad namely, National University of Modern Languages and International Islamic University, Islamabad offering social sciences courses. Students' responses from first and second semester enrolled in MPhil in the disciplines of Education, Psychology, Mass Communication, and International Relations were gathered. Sample of the study included 200 randomly selected respondents extracted through a sample size calculator (confidence level was 95%, confidence interval taken as  $\pm 3$ , from a population of 300 enrolled in semester 1 & 2, <https://www.surveysystem.com>). This sample size was further confirmed from Cohen, Manion & Morrison (2007) pp 104. A major aspect of the methodology is related to focus group discussion conducted by the teachers teaching the respondents to add the blended learning tools currently being used in teaching at higher level. A focus group of 20 teachers was formed and informal discussion of about 15 minutes was conducted with them. This discussion helped in delimiting teachers' current use of ICT tools such as emails, reflective videos, power point slides, Skype, face book and WhatsApp group being incorporated in blended learning. Data was gathered through an adapted questionnaire by Chang & Fisher (1998) having 38 statements on a 2 point likert scale (yes/no). 2 point close ended scale was used as students' responses were just required against the statement either in favour of or not in favour of. Another reason for using 2 point likert scale was that each statement was phrased in such a way that it only posed one characteristic per item. Pilot study of scale was conducted on a randomly selected sample of 30 students. Pilot study helped to enhance the reliability of this scale. For example, following refinements were done on the basis of pilot testing:

- i. "I have freedom to ask my teacher what I do not comprehend." This statement was refined as 'I have freedom to ask my teacher what I do not comprehend in online study material'. Cronbach alpha of this statement was raised from .68 to .79 after refinement.
- ii. "I have freedom to take help from other class fellows." This statement was refined as 'I have freedom to take help from class fellows through email'. After refinement, Cronbach alpha of this statement was raised from .56 to .78, thus enhancing the overall reliability of the research instrument.
- iii. Pilot testing also helped to determine subscale reliability and

content/face validity. Psychometric properties of the scale were

determined through expert validation also. Two experts validated the statements of the instrument to confirm its modification.

### Results

Table 1 displays the demographics of respondents extracted as sample of the study.

Table 1: Demographic Information of Respondents (n=200)

Department	1 <sup>st</sup> Year	2 <sup>nd</sup> Year
Education	30	25
Psychology	20	20
Mass Communication	25	30
International Relations	25	25
Total	100	100
Grand total	200	

### Psychometric Properties of the Research Scale

Table 2: Descriptive Statistics and Subscale Reliability (n=30)

Subscale	Mean	SD	Cronbach's Alpha
Access	5.67	1.56	0.79*
Interaction	6.15	1.78	0.88*
Response	5.48	1.37	0.78*
Results	5.62	1.58	0.81*
Overall Reliability			0.84*

\* $p < 0.05$ , \*\*  $p < 0.01$

Table 2 shows the reliability of subscales and overall the whole scale. Highest reliability among subscales is that of interaction ( $r = 0.88$ ), whereas overall reliability coefficient of the scale is  $r = 0.84$  at  $p < 0.05$  level.

Table 3: Split Half Reliability Analysis (n=30)

Cronbach's Alpha	Part 1	Value	.83**
		N of Items	16
	Part 2	Value	.85**
		N of Items	16
	Total N of Items		32

\* $p < 0.05$  \*\* $p < 0.01$

Table 3 reveals that reliability coefficient of Part I of the scale is  $r = 0.83$  and of Part II is  $r = 0.85$ . It means that both the parts of the whole scale are highly reliable for data collection as per the objectives of this study.

Table 4: Correlation Coefficient between Subscales (n=30)

Subscales	1	2	3	4
Access	1			
Interaction	.80*	1		
Response	.86*	.79*	1	
Results	.83*	.81*	.72*	1

\* $p < 0.05$  \*\* $p < 0.01$

The correlations among all subscales are towards higher level of reliability. The highest correlation coefficient was found between access through ICT and response through ICT ( $r=0.86$ ) and it was significant at  $p<0.05$  level.

Table 5: Analysis of Postgraduate Students' Perceptions Related to Access to Study Material through ICT

Access to Study Material through ICT		Frequency	
		Yes	No
1	Learning activities can be accessed at time convenient for me.	65%	35%
2	I can search on-line material at locations suitable for me.	35%	65%
3	Time is saved when I use on-line mode of learning.	60%	40%
4	I feel facilitated to work at my own pace for achievement of learning objectives.	70%	30%
5	It is my own decision how much to learn in a specific period.	65%	35%
6	I make my own time table for learning through on-line tools.	68%	32%
7	The flexibility helps me to accomplish my learning goals.	70%	30%
8	The flexibility helps me to explore my own area of interest.	80%	20%

Table 5 reflects students' perceptions related to access through ICT for learning purposes in a blended learning classroom environment. Highest positive response frequency was related to the statement "flexibility through using ICT helps me to explore my own areas of interest" (80%). Least agreed upon statement by post graduate students was: "I can search on-line material at locations suitable for me (35%).". Findings reveal that students comprehend that ICT provides flexibility of time in learning and exploring one's own areas of interest.

Table 6: Analysis of Postgraduate Students' Perceptions Related to Interaction using ICT

Interaction with ICT		Frequency	
		Yes	No
1	I like to communicate with my class fellows electronically.	85%	15%
2	I have to be self-disciplined in blended learning environment.	35%	65%
3	I have freedom to ask my teacher what I do not comprehend in on-line study material.	50%	50%
4	I have freedom to take help from other class fellows through email.	70%	30%
5	Other class fellows respond quickly to my queries.	55%	45%
6	I participate in self-evaluations on regular basis.	20%	80%
7	I participate in peer-evaluations regularly.	20%	80%
8	My peers show a positive attitude towards me	80%	20%

Data analysis related to the subscale "interaction with ICT" revealed that lowest response rate (20%) in affirmation was related to two statements "I participate in peer evaluations/ self-evaluations on regular basis". It means that students do not participate in self-evaluations/ peer evaluations regularly. Highest positive response (85%) was related to the statement "I like to communicate with my class fellows electronically via email, WhatsApp, face book, Skype, etc." It means that students at higher education level have realised that email is a flexible mode of communication which is not time bound and they can easily interact with their class fellows and

teacher whenever they want. E-communication through email supports them in getting answers to their queries in a flexible mode.

Table 7: Analysis of Postgraduate Students' Perceptions Related to Response to Study Material through ICT

	Response to Study Material through ICT	Frequency	
		Yes	No
1	Blended learning helps me to interact with class fellows and the teacher asynchronously.	60%	30%
2	I feel a sense of achievement, motivation and satisfaction in this learning environment.	75%	25%
3	I enjoy doing assignments in this environment.	50%	50%
4	It is my opinion that I can learn more in this environment.	60%	40%
5	Blended learning environment helps in organizing learning groups.	55%	45%
6	It is easier to work cooperatively with other group members.	20%	80%
7	ICT blended environment retains my interest throughout the course of learning.	75%	25%
8	I feel boredom towards the end of assignment completion.	50%	50%

Response through ICT is an important aspect of a blended learning environment and the results related to this subscale reflect that 75% students feel a sense of achievement, motivation and satisfaction blended learning environment. In addition to this, 75% students also agreed to it that ICT blended environment retains their interest throughout the course of learning.

Table 8: Analysis of Postgraduate Students' Perceptions Related to Results of Using ICT

	Results of Using ICT	Frequency	
		Yes	No
1	Learning objectives are clearly stated in each on-line assignment.	60%	30%
2	The organization of on-line assignment is easy to follow.	65%	35%
3	The structure of assignments provides a focus for learning to me.	80%	20%
4	Learning outcomes of assignments are stated clearly and concisely.	60%	40%
5	On-line and face to face activities are planned systematically.	55%	45%
6	Content is appropriate to be taught through ICT.	20%	80%
7	Presentation of content is clear.	75%	25%
8	The quiz helps me to assess and enhance my learning.	20%	80%

Post graduate students' perceptions related to results of using ICT in a blended learning environment reflects that 80% students agreed that structure of on-line assignments provides a focus for learning to them. Whereas least agreed upon statements was "quiz helps me to assess and enhance my learning" (20%). It means that students are comfortable while working in a blended learning environment as they work at their own pace on the given assignments and feel more focussed.

Table 9: Rank Order (n=100)

ICT Tool	1 <sup>st</sup> Sem %age	Rank	2 <sup>nd</sup> Sem %age	Rank
Emails	15%	3	35%	1
Reflective videos	14%	4	12%	4
Power point slides	09%	6	19%	2
WhatsApp	33%	1	15%	3
Skype	11%	5	10%	5
Facebook	18%	2	09%	6

Table 9 reflects the order of preference in using ICT tools in a blended learning classroom environment at university level. According to response frequencies, post graduate students of first semester preferred WhatsApp groups for sharing information and additional ICT support as a learning tool. Whereas least preferred choice by them was use of power point slides. Post graduate students of second semester highlighted emails as their first preference tool for a blended learning environment whereas face book was considered as least preferred ICT tool.

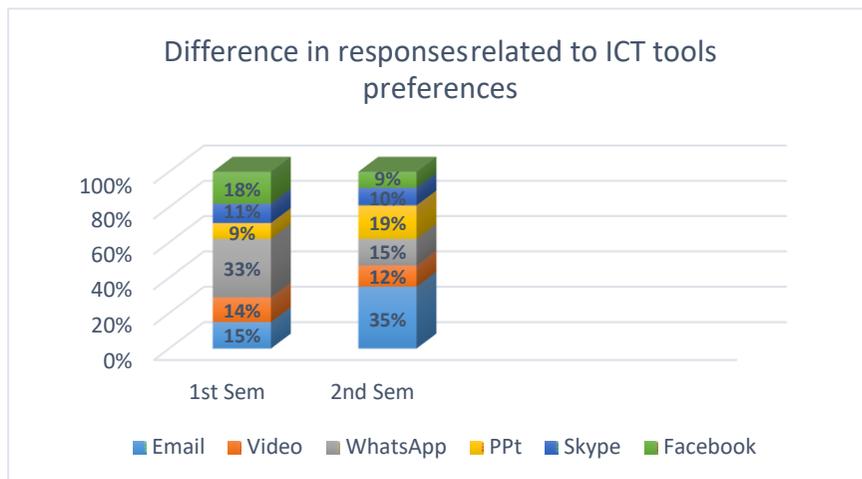


Fig. 1: Difference in Responses Related to ICT Tools Preferences (n=100)

All the four null hypotheses have been rejected as access, interaction, response and results through information and communication technology are positively related to post graduate students' perceptions about blended learning classroom environment. Fifth alternate hypothesis was about difference in students' preferences in using ICT tools, it was accepted as students of first semester preferred WhatsApp communication whereas second semester students voted for emails as communication tool.

### Findings and Discussion

Pedagogical strategies have undergone transformation over a vast period of time. Use of technology is the cornerstone for innovation in pedagogical methods. Hence, blended learning which includes face to face and online modalities is being increasingly explored as effective method for learning. ICT helps the students to explore newer dimensions of learning. In this way students become enabled individuals knowing their own areas of

interest. Findings of this study state that incorporation of ICT in learning provides flexibility to learners to explore their own areas of interest. Flexibility of time and space through incorporation of ICT in blended learning classroom environment has contributed towards reception of newer learning ideas (Amin, 2015).

### **WhatsApp as an Efficient Tool for Blended Learning**

Findings of the study related to preferences in using ICT tools in a blended learning classroom environment revealed that post graduate students of first semester voted most for WhatsApp groups. These findings are consistent with the research done by Gon and Rawekar (2017). They also concluded that interaction with students up to the maximum group of 50, easy accessibility to learning material, easy connectivity, high interaction with teacher and group members, low cost of connectivity and provision of complete privacy were some of the advantages due to which students preferred WhatsApp as a learning tool.

### **Effectiveness of Peer and Self-Evaluations**

Learning in a blended learning classroom environment results from the quality and frequency of student communication with each other as well as with their course instructor. Student engagement enhances when they become self-disciplined. Students feel motivated when they set their own targets of learning after getting guidance from their teachers. Similarly, they strive for learning excellence through a healthy competition with their group/class fellows once they have set their own learning boundaries after discussion and communication with their peers. But after setting their own learning targets, they need to know the level of achievement as well. For this purpose, peer evaluations and self-evaluations serve the best purpose. One of the major challenges in blended learning classroom environment is these two aspects of evaluation. Evaluation helps for quality management in blended learning. At least two electronic questionnaires must be filled by students to enhance quality through feedback. One may be for self-evaluation and the other for peer evaluation. Results of these, if communicated electronically may enable the students to overcome their learning limitations (Jeffrey, Milne, Suddaby & Higgins, 2014).

Student motivation and satisfaction in learning are obscured pieces of the academic puzzle. Researches have concluded that students feel engaged and motivated if they move towards personalized learning. The blended learning paradigm has a person centred approach towards achieving social, cognitive and psychological developmental goals. This learner-centred approach brings out the best in a student's cognitive, physical and psychological functioning. Studies show that it can help with better problem-solving, increased self-confidence, improved interpersonal skills, self-motivation and self-satisfaction (Rabah, 2015; Sanja, 2015).

Students have felt more focussed while working in blended learning classroom environment. Students feel comfortable in doing on-line assignments as the objectives are clearly stated as compared to off-line

assignments. It has been concluded in various studies that incorporating technology has increased efficiency in classroom learning environment. Students can get more done in less classroom time and have instruction tailored to individual learning styles to improve the speed at which they grasp crucial concepts. So it is evident that blended learning allows for more personalization and individualization in the classroom, because students work at their own pace and take time to understand properly one concept before moving towards next milestone. Improved student outcomes are also a major focus of blended learning. While blended learning implementation strategies are still in their infancy, more research is required in the area of evaluation of blended learning assignments.

### **Upgradation of Blended Learning Environment in Pakistani Universities**

In Pakistani universities, post graduate students use limited ICT tools in blended learning classroom environment, some of which are emails, WhatsApp, face book, Skype, multimedia slides. Blended learning has many facets and it changes its range of ICT tools in context of developed and developing countries. In developed countries LMS, Moodle, flipped classrooms are completely incorporated at higher education level, whereas in Pakistan we are still at infancy stage of creating blended learning environment in classrooms. Emails have been considered as effective e- communication tool by students in this study. But if not used accurately and properly, emails have their own pitfalls also; for example, from sloppy grammar to incomplete writing expressions. Teachers need to master the skill of email writing and students need to master the skill of comprehending it. While using email as e-communication tool in a blended learning environment, email sender may focus on the point that his/her email arouses interest for the recipient, is written with correct grammar and spelling, leaves no room for vague sentences and have a clear call for action and deadlines/instructions to be followed.

Similarly, use of power point slides has become an ingrained part of instructional settings. Students moving towards higher semesters have shown their liking for these as power point slides provide increased visual impact with enhanced spontaneity and interactivity. But these tools are not void of their limitations as well (Ozaslan, & Maden, 2013). In addition to this, post graduate students have agreed towards use of WhatsApp in their learning. There is also an emerging evidence that these Apps have a significant potential to support the learning process and has major implications on pedagogies, allowing direct access to lots of online resources, more focus on student's responsibility, autonomy, and creativity on one's own learning (Gon & Rawekar, 2017).

### **Conclusion**

In light of the information and communication technology available to the modern education systems, it makes sense for today's educational managers and administrators to re-think the classroom environment. Through blended learning, technology can come to the forefront of the

modern classroom to make it an effective place where learners of most styles can thrive. Adoption of blended learning in a post graduate classroom setting largely depends on how teachers move from their traditional roles to the roles of on-line instructors. In addition to this, blended learning in Pakistani context varies from that of ICT advanced countries where students and teachers' capacity building is better. In addition to this, implementation of blended learning at Pakistani universities counters some barriers. Some of these include technical difficulties such as installation and availability of technology for on-line classrooms, limited access to computers by some students which depicts socio-economic state of our country and last but not the least English language competency which becomes a big hindrance in comprehending instruction, assignments, etc., in a blended learning environment. From teachers' perspectives, lack of awareness about blended learning, lack of computer literacy and resistance to change and accept new trends are big hurdles.

The study findings also depicted that students do expect their teachers to be available 24/7. It is clearly said that faculty members facilitating a blended learning course are devoting more time getting accustomed with available technology, developing teaching strategies, and appraising the course critically as whole. Due to its demanding nature, academic organizations tend to provide adequate support and resources when blended learning environment is being established for the first time. It has to be understood by all stake holders of blended learning that its effective implementation involves installation of a comprehensive learning management system. Over a period of few decades the LMS has changed its role from simply being an e-learning delivery platform to a much broader blended learning platform. Aims of a blended learning classroom environment are impossible to achieve through use of social media, emails, power point slides etc. Only learning management systems provide a comprehensive outlook for access, interaction, response and results of using ICT in learning. Social media as one of Internet application also offers many benefits to modern learning systems including blended learning. So, educators may not ignore the importance and application of social media in blended learning. Therefore, it is proposed that educators and educational managers need to engage in intellectual dialogue to address their issues related to teaching modalities in a blended learning classroom environment and construct a viable model specifically designed for teaching learning institutions of Pakistan.

### Recommendations

On the basis of research findings, following recommendations are proposed:

1. Awareness seminars for students and teachers may be arranged at departmental and institutional level to sensitize them about importance and frequent use of blended learning techniques in classrooms.
2. Custom made learning management system (LMS) is an inevitable tool for blended learning and it has emerged as broader blended learning

platform in this era. Therefore, students may be trained to use LMS on regular basis.

3. Access, understanding and application of ICT tools in teaching-learning may be increased through trainings and workshops.
4. Social media tools (WhatsApp, face book, Skype) may be used to devise learning groups so that students feel motivated to learn.
5. Teachers may construct proper assessments which can be suitably used for self-evaluations and peer evaluations.
6. Teachers need to use more on-line activities such as reflective blogs, reflective videos, on-line discussions to incorporate true spirit of blended learning in classrooms.

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